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CHRONIC SYSTEMIC INFECTIONS AND THEIR SOURCES *

ERNEST E. IRONS, M.D.

CHICAGO

The interest of the medical profession in dental problems and in the relation of lesions of the mouth to general disease is not confined to this modern era. Jean Louis Petit, surgeon of Paris, 1674-1760, relates his experience with dental infection and systemic disease in the Traité des maladies chirurgicales. After enumerating the symptoms, including cough, loss of appetite, difficulty in obtaining sleep, chills and fever, from which one of his patients suffered, he continues: "The physicians whom he had consulted were led to believe that he was affected with consumption, and they treated him with this belief, but so far without success. On examination I found that two of his teeth were carious and I advised their extraction. A rapid restoration of the patient's health followed in less than a fortnight." [1] I would invite your attention to the procedure of our ancient surgeon. He does not say that he extracted the teeth, as he might well have done at that time, but that he advised their extraction, and no doubt he secured such dental consultation as may have been available in those days. We have in recent years passed through a period when both dentists and physicians have failed to avail themselves of the advice of their colleagues, but happily, I believe, that day is rapidly closing, and we are entering an era in which cooperation between the two professions will be close and cordial.

The increase of knowledge regarding the relation of acute and chronic local infections to more widespread and often disabling diseases has made possible the prevention of much suffering and has been the means of restoring to health many of those who seemed in previous years to be condemned to recurrent disability and even permanent invalidism. The dental profession has contributed largely to this end by introducing methods for the recognition and cure of infections about the teeth. While experience teaches that the removal of alveolar abscesses frees certain patients from recurrences of their arthritis or other metastatic lesions, and while it is fairly clear why such a result is often to be anticipated, it is not so evident why many other alveolar abscesses remain symptomless and, so far as can be determined, wholly unassociated with metastatic disease. Why should infections of the alveolar processes behave differently, and what are the influences that lead to metastatic infection from an alveolar abscess that has lain quiescent for months or years? Dental infection in its relation to the body may be best understood when considered with other similar sources of metastatic disease, and I propose to discuss some of the more general facts of the mechanism of infection, and later to attempt to apply these conceptions to the solution of the problem of the patient who comes seeking relief. But before passing to the question of metastatic disease, we may consider briefly some of the more general relations between disease of the mouth and that of the remainder of the body.

THE MOUTH AND GENERAL DISEASE

The intimate relation, sometimes causal and sometimes resultant, between disease of the mouth and general disease needs no emphasis. The recurrent glossitis and other oral inflammation of pernicious anemia, the hemorrhages of the gums and mucous membranes in leukemia and scurvy, and the herpes associated with gastric disturbances, exemplify the close interrelations of the tissues of the mouth with the rest of the body. The degenerative diseases, including arteriosclerosis and chronic nephritis, appear to depend for their cause in part on chronic infections derived from the mouth. In a study of the teeth of 329 patients with various diseases in Cook County Hospital of whom 124 were roentgenographed, alveolar abscesses were found in 44 per cent. When these patients were classified according to disease, there were found 76 per cent. of alveolar abscesses in the arthritic group, 47 per cent. of abscesses in the cardiovascular group, and in the remainder, including acute diseases such as typhoid fever and pneumonia, 23 per cent. of abscesses. Other investigators have found a still higher percentage of alveolar abscesses in various groups, and have also emphasized the effect of chronic infection in the production of chronic degenerative diseases. In roentgenograms of 600 adults, Black found 78 per cent. showing areas of bone destruction; but in 72 per cent. there were as yet no evidences of systemic disease. More difficult of demonstration, but of apparently none the less importance to the general health, is the direct absorption of infection and the swallowing of pus derived from infected gums of pyorrhea. The absence of immediate symptoms indicates, not that progressive damage is not occurring, but only that as yet the effects have not become clinically visible. The unfavorable influence of such prolonged exposure to the products of suppuration will be referred to later, but no argument appears necessary to establish the desirability of the elimination of such chronic infections.

* Read at the annual meeting of the Chicago Dental Society, Jan. 27, 1921.

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MECHANISM OF INFECTION

It is, of course, well known that the sites of chronic infection in the body are many, and include teeth, tonsils, sinuses, prostate, gallbladder, to name only a few of the commoner. It is also a matter of general experience that many people have one or more such infections for months or years without suffering from metastatic lesions in joints, eyes or elsewhere, so far as may be determined from clinical observation. They may be entirely ignorant of the presence of infection in the body. The chief factors that determine whether the infection shall remain confined to its local site, or whether it shall extend into adjacent or distant parts of the body may be grouped under three headings: (1) the virulence or invasiveness of the organism; (2) the nature and extent of the infected tissue, and (3) the resistance of the patient.

Bacteria and other disease producing viruses vary widely in their ability to invade and produce changes in animal tissues, and this variableness of action depends on a number of conditions, among which are the presence or absence of available food supply, suitable oxygen tension, and the degree of protection afforded the bacteria against the fluids and cells of the host. One species of animal is naturally resistant or immune to infection by an organism, while another species is extremely susceptible. Different individuals of a species may differ widely in their susceptibility to a given infection, and this difference in individuals is frequently observable in man.

We commonly think of a virulent organism as one which, like the streptococcus in erysipelas or cellulitis, is able rapidly to invade the tissues, with resulting edema, pain and a course of stormy illness. This conception, while correct so far as it goes, is incomplete and should not divert attention from those infections which proceed more slowly, often unnoticed for a time, but in which the progress of invasion of the host by the bacterium is no less sure. Infection of the latter type is illustrated by some of the common forms of tuberculosis. The chronic types of metastatic disease of joints and eyes arising from infections about the teeth and other localized areas throughout the body, in their chronicity and in the relative absence of symptoms of systemic disease, resemble the latter more than the former group, although all degrees of acuteness of both primary and secondary lesions may be found. The process of invasion consists, however, of a series of short steps, rather than of one continuous process.

Changes in growth reactions and in ability to invade the animal body have been observed in bacteria during successive transfers in the culture tube, and it has been assumed that similar changes in invasive power occur during their residence in some localized area in the body. It is possible that such modifications occur; but indisputable proof of these changes is difficult to obtain, and instances of variations in the disease-producing power of organisms become relatively insignificant when compared with the remarkable constancy of growth and pathogenic power of most disease-producing bacteria or viruses. While it is true that epidemics of contagious disease vary in severity and in case mortality from season to season, and even during the course of a single epidemic, the cultural characteristics and the clinical features of the disease in the typical case do not change in any essential particular. Thus, typhoid fever, lobar pneumonia and epidemic meningitis present the same clinical pictures today as they did twenty or more years ago, and the bacteria that cause them show the same cultural characteristics.

It thus appears that in our inquiry into the mechanism of metastatic infectious disease we must look rather to the remaining two factors, the site and nature of the infection, and the resistance of the patient.

THE EXTENT AND NATURE OF CHRONIC INFECTION

One of the outstanding and puzzling factors encountered at the outset of our survey of chronic localized infections is that while many patients present themselves with evidences of metastatic lesions that evidently have their source in a chronically infected area of tissue, there is a very much larger number of persons who are subjects of chronic local infections of equal or even greater extent, caused by the same bacteria, who show no evidence of secondary infection in the joints or other organs. At first glance such chronic infections might seem to differ in this respect from the acute infections arising from minor wounds; but a moment's consideration will suffice to show that for one pin prick, abrasion or cut that is followed by serious local or general infection, there are tens or scores of similar wounds incurred under conditions that render likely the introduction of pathogenic bacteria into the wound, which promptly heal without clinical evidence of infection.

Evidently the reactions of the cells and fluids of the rest of the body against the impending bacterial invasion, which we are accustomed to speak of as resistance, determine to a large extent the outcome of a local infection, no matter whether it is acute or chronic. The resistance of the body to invasion, however, is not a constant quantity, but rises and falls in consequence of changes in nutrition, or because of fatigue, exposure to cold, or other favorable or unfavorable influences of environment. The course of an acute infection is at once determined by the virulence of the organism, the extent of the area of implantation, and the resistance of the body at the time of the infection, while in the chronic local infection the infecting bacteria are afforded a safe residence in which they may multiply, and from which they may invade the body at any time, and often repeatedly when its resistance is temporarily lowered. Bacteria in chronic lesions thus have many opportunities to invade the body during periods of depressed resistance; or, if the resistance of the body is maintained by a wide margin of safety, they may never be able to effect an invasion sufficient to produce symptoms. The tissues involved in the local chronic infection may be in close connection with healthy tissue, or they may be surrounded by a fairly firm wall of granulation and connective tissue, which affords some degree of protection to the adjacent uninfected structures. In any case, however, there is a fairly direct communication between the local lesion and surrounding tissue by means of lymphatics and blood vessels. Even in so isolated a lesion as an alveolar abscess, the lymphatics pass out to surrounding bone and subjacent tissues, and as Noyes has shown, the lymphatics below the jaw can be injected through the pulp chambers of the teeth of the mandible. The enlarged regional lymph nodes found in association with chronic infections of the mouth and tonsils afford clinical evidence of the close lymphatic connection between infected areas and surrounding tissues.

The degree of confinement of the infected area may influence the passage of organisms through lymphatics and blood vessels, and clinically, generalized infections result more often from lesions entirely closed, either acute or chronic, than from those in which external drainage is free.

The defenses of the body against bacteria that have passed the skin or mucous membranes, or have entered through the gateway of chronic localized infections, are maintained by means of the antibacterial action of the fluids of the body, by the action of the leukocytes and other phagocytic cells, or by a combination of these. Several of these reactions can be demonstrated in the test tube, and have received various descriptive names, such as phagocytosis and agglutination. While some estimate of the probable resistance of the body to impending infection can be made by means of these reactions in the laboratory, it is quite possible that the mechanism of bodily defense involves other or more intricate chemical reactions, which have thus far eluded demonstration by the physicochemical means at our command. Nevertheless, we know that the resultant of these forces which we call resistance varies greatly from time to time, in response to changes in physical environment such as exposure to cold, severe local injuries, starvation, errors in diet, fatigue, and with the changes attendant on the passage from youth to old age.

In view of these many circumstances, one of which or several in combination may serve to favor or to prevent the passage of organisms from a chronically infected area into the body, it is not surprising that such infections may produce metastatic lesions in one person and remain symptomless in another, or that an infection which has remained quiescent and unrecognized for years may suddenly cause widespread and disabling disease.

Resistance to infection, or immunity, is only relative, and the fine balance may be turned unfavorably to the patient by any of the physical agents just enumerated. Immunity which is sufficient to protect against the degree of exposure ordinarily encountered may prove ineffective when the dose of infecting organisms is increased. Antityphoid inoculations confer an increased immunity to typhoid fever, and persons so inoculated do not contract typhoid even when they occasionally ingest typhoid bacilli in numbers in which they usually occur in polluted water supplies. If, however, the same persons are daily exposed by the ingestion of heavily polluted water, as happened to certain companies of soldiers in France in the World War, they do contract typhoid fever. The danger of presuming too much on natural immunity is seen in the serious infections, with sometimes general sepsis and death, which occasionally follow the extraction of many infected teeth at one time. The dental axiom that when many infected teeth are to be removed, only two or three should be extracted at each sitting at intervals of several days, expresses in terms of dental practice the necessity of conserving the resistance of the patient, by avoiding an overdose of infection through the laying open of excessive areas of tissue and lymphatic vessels.

MULTIPLE INFECTIONS

Just as an infection involving large areas of tissue is more likely to result seriously for the patient than is one due to the same cause but confined to a small area, so infection of several areas involving different tissues is more difficult to eradicate than is a small, single lesion. Illustrations of the unfavorable effect on the patient of one infection superimposed on another, such as in secondary pyogenic infections in pulmonary tuberculosis, are also seen in cases of coincident infections of teeth, tonsils and sinuses. In our study of iritis, Dr. Brown and I frequently found two or more sites of infection; and in a number of such instances the relief of the iritis was correspondingly slower than in those cases in which the infection was more limited.

In considering the possible time relations between infections of teeth, tonsils, eyes and joints, the teeth have been charged by some with being the primary offenders. In a number of instances it has seemed not unlikely that the primary source was elsewhere, as in the tonsils, and that occasionally the lesions developing about the roots of pulpless but otherwise presumably healthy teeth were as truly metastatic as was the iritis or arthritis, though occurring at an earlier date. With this thought in mind, it appears not unreasonable for the dentist who is confronted with the problem of keeping in order a mouth in which repeated infections continually add to the difficulty of conservation of the teeth to request a survey of the patient for other sources of infection. The teeth should not be obliged to bear all the odium of primary sin.

OTHER PORTALS OF INFECTION

Even a brief review of the mechanism of infection would be incomplete without some reference to certain other perhaps less frequent and undoubtedly less considered routes of ingress of organisms in chronic and recurrent infections. The relation of these routes to the infections that enter by them may perhaps be best understood by reference, first, to the acute infectious diseases. The walls of the pharynx, trachea and bronchi are supplied with an extremely rich network of lymphatics, which afford means of transport for such bacteria and viruses as are able to pass the mucous membrane. In lobar pneumonia, Blake and Cecil have shown that the disease can be regularly produced in monkeys by the introduction of a minute amount of virulent organisms within the trachea by means of a sterile needle passed through it just below the larynx. Within three hours after such inoculation, organisms can be demonstrated in the walls of the bronchi, and in six hours can be isolated from the blood.

Within the stomach, the free hydrochloric acid of the gastric juice exerts a strong antiseptic action, so that normal stomach contents usually contain few of the commoner organisms, such as streptococci, and thus a large proportion of the pathogenic organisms that pass from the mouth to the stomach are here destroyed. During periods when gastric secretion is suspended or greatly decreased, or when the free hydrochloric acid is neutralized, organisms susceptible to the acid may escape death and pass on to the intestine. That this may occur not infrequently was shown by some investigations of the feces in scarlet fever, a disease in which hemolytic streptococci are found quite regularly in the throat. In 30 per cent. of cases Dr. Moody and I were able to determine hemolytic streptococci in the feces, although in some instances many examinations were required. In typhoid fever it is generally held that the organisms pass from the intestine into the blood stream by way of the lymphatics. Tuberculous lesions of the thoracic duct have been noted in cases of primary intestinal tuberculosis; and

other diseases, such as some forms of anthrax and actinomycosis, have been held to have a similar pathogenesis.

Clinically, in certain forms of chronic colitis, arthritis is encountered, and at necropsy in many cases of acute and chronic intestinal infection there is extensive enlargement of the mesenteric lymph nodes.

The number of instances in which the infection which gives rise to an iritis or arthritis commonly associated with chronic local lesions enters the body through the supposedly intact mucous membranes of the pharynx, trachea or intestine is, so far as we can now show, relatively small; but a limited group of carefully studied cases suggests that this route must be considered. Were it not that the recognition of this route seems important in the understanding of certain obscure cases in which the search for the cause of metastatic infection has been heretofore unavailing and in which a further sacrifice of unoffending teeth and other organs impends, an incomplete reference to the gastro-intestinal tract as a source of infection might be regarded as unjustifiable in that it may stimulate rather than check the unscientific use of the term "intestinal autointoxication." Perhaps no term in medicine has been less well defined in the minds of medical men, and no other term has been so overworked, and used as a cloak for ignorance, so often to the detriment of the patient, as this term "intestinal autointoxication," which substitutes a catchy phrase for a careful examination. It is only after a thorough examination of the more usual sites of chronic infection that a diagnosis of metastatic infection arising from this source should be entertained. Neither the acute gastro-intestinal infections and food intoxications in patients previously in good health nor the intoxications from chronic constipation are now under discussion.

In view of the manifold influences both within and outside the body, which may play a part in determining the course of an infection, it does not now seem strange that in one patient the bacteria in an alveolar abscess remain localized, and in another produce metastatic disease. Infections about the mouth probably stand first in point of frequency as a cause of metastatic infections; but the entire burden of effort for the recovery of the patient should not be arbitrarily thrown on the dentist in view of the many other sources of infection, some of which have been frequently overlooked. It also sometimes happens that pains, supposed to be infectious in origin, are in reality due to other causes, including nervous disorders and secondary malignant growths.

THE PROBLEM OF THE PATIENT

In order that the interests of the patient may be best served through close and well correlated team play of dentist and physician, it is essential that the problems of each be understood by the other. The urgency of the demand for correction of dental disease varies greatly in different patients and is determined by considerations which in one case may be quite different from those in another. It is the failure in the first instance to recognize that such differences exist, and then the difficulties of properly evaluating them, that have led to many of the misunderstandings between physicians themselves, and between them and their dental colleagues. I may best make this clear by some hypothetic cases.

A man on routine examination is found to be in fairly good health, or perhaps a little below par in some respects, and he has some teeth with clearly marked or doubtful apical destruction. The correction of such pathologic conditions as are present is evidently a dental problem, in which the judgment of the dentist will determine what, if anything, shall be done with these teeth. It is assumed that definite alveolar abscesses will receive appropriate treatment with a view to conserving, if possible, the masticatory function.

Again, a man suffers from pains in the joints or nerves, frequently described by the popular term rheumatism, and perhaps has minor anatomic changes in the joints. On examination it is found that, in addition to areas of infection elsewhere in the body, he has one or more teeth, the roentgenograms of which show apical destruction, such that the dentist cannot be certain whether active infection is present or not. It is obvious that the dental management should be conservative, along lines determined by the local conditions in the mouth; and the evident infections elsewhere in the body should be dealt with, rather than teeth sacrificed.

Similarly, even when secondary manifestations of infection are more serious, as in the more severe forms of arthritis, the removal of teeth about whose roots there are minor lesions, which the well trained dentist believes to be without active infection, is to be deprecated, especially in view of the resulting interference with mastication and perhaps nutrition, on which the future welfare of the patient so largely depends.

The relative importance of the factors in the following example are decidedly different from those in the foregoing A man lost the sight of one eye by an accident in childhood. He is now having recurrent attacks of iritis in his remaining eye, and vision has been reduced to less than half the normal. Further recurrences must be prevented if he is to escape total blindness. A careful examination detects no demonstrable infectious lesions except a slightly infected tonsil and two or three teeth concerning the infection of which the best dental consultants are doubtful. In view of the irretrievable loss of sight which will result from further iritis, radical treatment of both tonsils and teeth seems to be not only justified, but demanded.

Between these extremes there occur all manner of combinations of findings and degrees of urgency, and a satisfactory decision can be arrived at only through close cooperation of the physician and his dental and other colleagues.

The therapeutic results to the patient of the removal of infection will vary greatly in different persons. The secondary lesions may be limited in extent but cause great disability, as in iritis or arthritis of a joint essential to the use of an extremity, or the lesions may be widespread and progressive, but in the early months may cause relatively little disability. On the removal of an alveolar abscess or other infection, the metastatic inflammation frequently subsides rapidly, in some instances even more rapidly than seems possible on theoretical grounds. In other cases, improvement may be preceded by an exacerbation of the secondary infection, followed by slower but permanent healing. This variability in behavior of the secondary lesions may perhaps be related, in the case of the alveolar abscess, to the type of the infection: whether partially enclosed by a dense layer of granulation tissue, or whether continuous from the dental structures into the alveolar process, with lymphatic vessels freely passing to the surrounding tissues.

When secondary invasion of the joints is widespread, improvement may be slow, even when it seems certain that the original site of infection has been removed. It is only fair to state that a number of good clinicians are extremely doubtful whether anything of value is gained by attempts to remove local infections in cases of widespread arthritis, particularly of the type known as arthritis deformans. It is well known that periods of spontaneous improvement occur independently of such attempts, that in such cases the joints themselves may become sources of infection for other joints, and that the most important measures are those which will assist in increasing resistance by improving the nutrition of the patient. While these facts are evident to any one who has studied such cases, I cannot agree with those who take an absolutely pessimistic view of the results to be anticipated from attempts to rid the body of sources of further infection, provided it is recognized that such measures are only preliminary to patient and perhaps long continued care and general supportive treatment. Even the most thorough treatment, based on clinical studies of metabolism and on the removal of chronic infection, sometimes fails to stay the course of the more severe types of arthritis deformans.

SOME MEDICODENTAL MISCONCEPTIONS

Ten years ago, few physicians concerned themselves with the difficulties encountered by dentists in the care of the teeth, and most dentists were equally uninformed in regard to changes that occur in the body as a result of diseases of the mouth. The mutual study of problems of disease has been of inestimable advantage to both professions; but with this broadened scope of information, there have come certain misconceptions, which have grown largely through incomplete and partial knowledge of anatomy and physiology in the new fields.

I hesitate to refer to so purely dental a question as that of the "dead tooth." Most physicians, and possibly a few dentists, conceive that a pulpless tooth is a "dead tooth." Since the nutrition of a pulpless tooth may still be maintained by the intact peridental membrane, and its lymphatics may still be in vital connection with the lymphatics of the alveolar process, the use of the term "dead tooth" in this connection is inaccurate and misleading. Terminology here may be profitably improved; but the essential fact to be insisted on is that loss of sensory function of the pulp through its death does not fatally impair the nutrition of the tooth, and evidence adequate to warrant its removal must come from sources other than the demonstration of loss of pulp sensation. It is, of course, understood that such a tooth is probably more susceptible to infection, and by reason of its decreased sensitiveness requires more careful supervision, than entirely normal teeth.

Another misconception is encountered in the attempted application of the results of examination of the white cells of the blood to decisions as to the presence or absence of infection about the roots of teeth, and the consequent determination of treatment. Efforts by dentists to study patients more thoroughly by means of laboratory examinations, such as blood counts, are most laudable; but unless the dentist is able himself to interpret his reports, he is very likely to be misled. It repeatedly happens that the dentist, perhaps in doubt as to the presence of apical infection, and desiring to give his patient the best attention possible, sends him to a laboratory, and receives a report that the blood shows a leukocytosis, and that therefore infection of the teeth is still present and is to be sought. Infection about the teeth evokes a reaction in the leukocytes in no wise different from infection in tonsils or in a corn, and the chances of error from the information afforded by a leukocyte count in a patient in whom other sources of infection or the possible physiologic causes of leukocytosis have not been excluded, are much greater than those arising from attempts to determine the condition of the teeth from roentgenograms alone. What is needed is not fewer leukocyte counts, but more intelligent interpretation of the information thereby gained.

This is the era of laboratories. Medical laboratories spring up almost daily, and when they are able to attach the word "research" to their titles, the height of scientific achievement seems assured. That there should be this increase in laboratory study of patients is one of the hopeful signs in medicine and dentistry. The advances in all sciences have come largely through research carried on by laboratory workers. Further, it is obvious that for one piece of investigation which yields permanent and utilizable results, there will be many that seem at the time barren; but these are not necessarily to be discouraged. It seems desirable, however, to consider rather carefully, before embarking on a time-consuming investigation, whether results commensurate with the effort may reasonably be expected. Applying this idea to the study of the individual patient, would it not be well, before putting him to the expense of laboratory investigation, to determine just what is to be gained by the proposed tests, and whether these isolated tests made at various intervals, and perhaps without the controls necessary to the reliable and proper interpretation of the results, can be expected to yield any information that will be of value?

There is no more interesting or profitable field of collateral study for the physician than that of the problems of the teeth, as portrayed by modern dentistry, and I believe dentists will find equal satisfaction in a survey of the changes in the body resulting from disease, the cause of which often finds expression in changes in the teeth.

Frank and friendly discussion and exchange of ideas between the two professions will lead to a better understanding of the problems of each by the other, and will render more effective our efforts to prevent disease and alleviate suffering.

122 South Michigan Avenue.

Group Medicine.—Group medicine in some form, is the only means by which the patient can receive the attention to which the advancement of medical science entitles him. A medical building with a medical library where physicians can meet, common access to laboratories containing modern means of diagnosis with good technicians in charge, the whole managed and controlled by the physicians of a community, would enable every patient, rich or poor, to obtain proper treatment. A basic fee may be charged each physician, the remainder of the expense to be divided in proportion to each member's use of the equipment. Arrangements for mutual consultations, for early diagnosis, and the proper handling of emergency cases should be made. The city's health and institutional work should also be performed by the medical group and the proceeds devoted to bettering the equipment of the laboratories. All these desirable arrangements may be made possible by cooperation between the physicians of a community.—W. J. Mayo, *Surg. Gynec. & Obst.* **32**:102, 1921.

TEST FOR CHANGES IN THE PROTEIN CONTENT OF THE CEREBROSPINAL FLUID

BASED ON THE FLOCCULATION OF LIPOIDS

HIDEYO NOGUCHI, M.D.
NEW YORK

The several roughly quantitative, clinical methods now in use for the detection of pathologically increased proteins in the cerebrospinal fluid may be divided into two groups, those in which heating is required, and those which are carried out in the cold. Of the former, the butyric acid reaction [1] has been considerably used because of its delicacy and the readiness with which the results can be read; but the unpleasant odor of the reagent has been a drawback to its use. Amoss [2] has proposed a method in which the native proteins of cerebrospinal fluid are precipitated by boiling for six minutes in a water bath a mixture of the spinal fluid (0.2 c.c.) and an aqueous solution (0.6 c.c.) containing primary phosphate (3 per cent.) and glacial acetic acid (0.05 per cent.). The latter method, while perhaps a trifle less sensitive than the butyric acid reaction, yields practically comparable results, and the use of a single odorless reagent is a distinct advantage. On the other hand, a method in which a single, odorless reagent is used, without heating, would constitute a still further gain in practice.

In the several nonheating procedures the contrast between normal and pathologic is less clear-cut than in the butyric acid reaction or Amoss' test. Such are the Nonne-Apelt [3] and the Ross-Jones [4] methods with saturated ammonium sulphate solution, and Pandy's [5] reaction with concentrated (1:16) phenol (carbolic acid). Trichloracetic acid and sulphosalicylic acid have also been used as precipitating reagents, but as they bring about precipitation in normal as well as pathologic fluids, careful quantitative measurement of the precipitated proteins is necessary. Such quantitative tests with sulphosalicylic acid have been recommended by Ravaut and Boyer [6] and by Denis and Ayer.[7]

It is evident, then, that none of the methods so far used is without drawbacks; hence the attempt to devise a method combining several advantages—the use of a single reagent which can be simply applied (without heating) and is capable of preservation; delicacy, rapidity, and distinctness of reaction.

As will be evident from the constituents of the reagent, the reaction is not altogether based on the direct precipitation of the proteins contained in the cerebrospinal fluid, but is due to a concomitant flocculation of certain lipoids which the reagent contains. The volume of the precipitate produced is therefore more copious than that brought about by the direct precipitation methods, such as the butyric acid, Amoss', Pandy's or Esbach's methods.

THE REAGENT AND ITS MODE OF APPLICATION

The components of the reagent are (1) alcoholic extract of acetone-insoluble tissue lipoids prepared by the method to be described, and (2) a solution containing 0.5 c.c. of glacial acetic acid, 10 c.c. of a saturated solution of picric acid in absolute alcohol, 1.5 gm. of acid potassium phosphate, and 4 gm. of sodium chlorid in distilled water to make the total volume 1,000 c.c. The lipoidal extract and the acid-salts solution, which will be referred to, respectively, as Solution 1 and Solution 2, are later mixed in the manner to be described.

Preparation of the Stock Solution of the Acetone-Insoluble Lipoids (Solution 1).—Beef heart is ground in a sausage machine, and then completely dried by a fan over a heater. One hundred grams of the dried substance are extracted with 1 liter of acetone for five days at room temperature, with daily shakings. The acetone is then discarded, and the mass of solids freed from acetone by evaporation and then extracted with 1 liter of absolute alcohol for five days at room temperature. The golden yellow alcoholic extract, which contains acetone-insoluble tissue lipoids (which has been found also to be an excellent antigen in the complement fixation test for syphilis), is separated from the dried muscle and tested for its suitability as the reagent. The criterion of usefulness is the transparency of a mixture of the alcoholic extract and Solution 2 in a ratio of 1:9. If a marked opalescence bordering on opacity is produced, the extract is unsuitable. As a rule a satisfactory solution—faintly opalescent, but almost transparent—is obtained.

Preparation of Solution 2.—It is convenient to prepare a stock solution of the acids and salts in distilled water as follows: One and five-tenths grams of acid potassium phosphate (KH_2PO_4) and 4 gm. of sodium chlorid are dissolved in 990 c.c. of distilled water containing 0.5 c.c. of glacial acetic acid. Finally, 10 c.c. of a saturated solution (approximately 3.5 per cent.) of picric acid in absolute alcohol is added. If the solution is not to be kept in the refrigerator it is desirable, in order to prevent any fungus growth, to make it up in ten times the strength in which it is to be used, that is, to dissolve the salts in 90 c.c. of distilled water, containing 0.5 c.c. of glacial acetic acid, and add 10 c.c. of the picric acid solution. At the time of use, 1 part of this solution should be mixed with 8 parts of distilled water, and 1 part of the lipoidal solution added.

Preparation and Preservation of the Reagent.—To 9 parts of Solution 2 is added gradually, mixing by gentle agitation, 1 part of the alcoholic lipoidal extract (Solution 1), the resulting mixture being faintly opalescent, almost transparent. (If the process is reversed and Solution 2 poured into Solution 1, a turbidity results which makes the reagent unsuitable.) The mixture in this form has been found to remain unchanged for a period of several weeks and will perhaps prove not to be subject to deterioration; but as the two solutions may be preserved separately for an indefinite period, the reagent can be made fresh from time to time as needed.

It must be mentioned that the ordinary alcoholic extract of beef heart with or without the addition of cholesterin (so-called syphilitic antigens used by some serologists) does not give a useful reagent, but one too sensitive, readily producing precipitation even when mixed with normal spinal fluid. An alcoholic extract of the drief beef heart muscle without preliminary acetone extraction is likewise unadapted, owing to the presence of certain acetone-soluble lipoids (cholesterin, etc.). The addition of cholesterin to a suitable alcoholic extract of acetone-insoluble tissue lipoids, as already described, renders the latter too sensitive and therefore worthless as the reagent.

A differentiation can be made between pathologic and normal spinal fluids without the addition of the salts, acid potassium phosphate and sodium chlorid, to Solution 2; but their presence in the concentrations indicated makes the readings easier and more certain by causing greater opacity of the flocculated lipoids.

MODE OF APPLICATION

Into a small test tube such as ordinarily used for the writer's system of the Wassermann reaction (10 by 1 cm.) is measured 0.1 c.c. of cerebrospinal fluid, and 1 c.c. of the reagent is then

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added. A normal spinal fluid remains perfectly clear or becomes only faintly opalescent, while a dense general turbidity is produced in all specimens containing an increased amount of globulin or albumin. In cerebrospinal fluids from bacterial meningitis the flocculation is dense and copious, followed by complete or partial precipitation of the granular flocculi within about an hour at room temperature. Specimens from general paresis and tabes dorsalis give a dense flocculation, somewhat less copious than those from acute inflammatory conditions, the granular flocculi settling to the bottom of the tube within a few hours.

The reaction is rapid, the maximum opacity being reached within a few minutes; the granulation and subsequent sedimentation of the flocculi, however, require a longer time. The reaction takes place at any temperature from that of the icebox to that of the incubator, but room temperature has been found most satisfactory. If haste is necessary, the reaction can be read within ten minutes; but a supplementary reading after the tubes have been left at room temperature for several hours or over night is advisable. A mild reaction is indicated by a slight general turbidity, best recognized in reflected light.

The method has been applied to a large number of specimens of cerebrospinal fluid, and comparative observation shows that the test runs parallel with the butyric acid reaction and hence promises to be a useful addition to the diagnostic methods applied to the cerebrospinal fluid.

Quantitative determination of the protein contents of the spinal fluid can also be made with this reagent. The details of the procedure are reserved for later publication.

THE NECESSITY OF CLEAR THINKING IN MILK MODIFICATION

LEWIS WEBB HILL, M.D.
BOSTON

A considerable portion of the work of the general practitioner consists in infant feeding. On account of the numerous methods of milk modification recommended and the calculation involved, many men become discouraged with the subject, lose interest in it, and give it little attention. The baby as a consequence suffers.

A large proportion of the babies in this country are fed under the advice of general practitioners. Much of their work is good; also, much of it is careless, largely because a practitioner who is dealing with the whole domain of medicine may feel that infant feeding is one of the least important parts of it, forgetting that the proper feeding of the young infant that is deprived of its natural nourishment is one of the most important departments of preventive medicine. There is no branch of preventive medicine in which better results can be obtained by the application of intelligent methods.

It is vital for every general practitioner to have a good working knowledge of infant feeding. Broadly speaking, his knowledge may be grouped under three heads:

1. How to dilute or combine milk or cream in such a way as to secure any desired combination of quantities of the three food elements (fat, sugar and protein), in the resulting mixture.

2. The pathogenesis and nature of the various digestive and nutritional disturbances of babies.

3. A knowledge of what combinations of the food elements are suitable for any particular baby, sick or well.

The practitioner must have clearly fixed in his mind the elementary nature of milk; he must not look on milk as milk, but he must look on it as being made up of fat, sugar, protein, salts and water. He must realize that disturbances of digestion arise from sugar, from fat, or from protein or from improper combinations of these elements, and that, therefore, he must take into account the amounts of these that he is feeding to any baby, and be able to vary each one of them at will in any mixture he offers. He must also have some numerical method of expressing these amounts. It is this necessity for clear thinking with regard to milk modification that I wish especially to discuss.

THE MODIFICATION OF MILK

By the modification of milk is meant changing the composition of the original cow's milk in such a way as to make it suitable for the digestion of the particular infant that is being fed. It is possible to feed some babies successfully on undiluted cow's milk, but these babies represent a small minority. For practical purposes it may be said that it is always necessary to modify cow's milk before it is fed to young babies. Since the beginning of scientific infant feeding, many methods of modifying milk have been proposed; some authorities have recommended simple dilutions of whole milk, while others have felt that babies generally do better if more fat is given. The latter group has, therefore, added cream to the modification or has used dilutions of cream in order to obtain the higher fat content. It is often possible to feed the normal baby on a wide variety of foods, as he has considerable power of adapting himself within certain limits to changes in the composition of his diet. It therefore follows that no one method of milk modification is the only one that can be used. Any method of milk modification is correct for any particular baby, if the mixture contains the proper amounts and proportions of the various food elements for him to grow and develop normally. It is desirable, however, to proceed in a rational manner, to change the original cow's milk by design and not haphazard, and to have at one's command methods of milk modification which will allow of varying at will the individual constituents of the milk—fat, sugar, protein and salts—to meet the needs of various babies with different digestive powers. It is also desirable in any system of milk modification to have a way of expressing what has been done in the exact language of figures, in order to make it clear to ourselves and intelligible to others, and to make our procedures available for purposes of record. Any method of milk modification involves, therefore, a certain amount of calculation. Much of the confusion with regard to infant feeding has arisen on account of the numerous ways of calculation and methods of modification that have been recommended. The important thing is that the particular method of modification which has been used is not the significant fact, but that the content of the resulting mixture as regards the various food elements is the point that must be continually borne in mind. Many times the identical result may be obtained by two different methods of modification. An intelligent practitioner should know his food elements, should have clearly fixed in his mind approximately how much of each one of these elements he desires to feed to the baby; then he may proceed to concoct this combination by means of any method of modification with which he may be familiar. Some men get into the habit of using one particular

method; others may use methods that are radically different, but may secure equally good results. Any one who is feeding babies should have at his command several methods, and should use the one which is most adaptable to the particular case with which he happens to be dealing.

There are present three methods of milk modification in general use: those of (1) whole milk dilution; (2) top milk (cream) dilution, and (3) gravity cream and skimmed milk mixtures.

WHOLE MILK DILUTIONS

The method of whole milk dilution is the simplest method of milk modification. It was the first one used, before the development of modern infant feeding, and in the last ten years has had a revival of popularity. Its chief advantage is its simplicity: any mother, no matter how ignorant, can be easily taught to mix together milk, water and sugar. It is also easy for the physician; and most men who are in the habit of using whole milk dilutions pay but little attention to the percentages of the food elements in the mixture; they think rather in terms of ounces of milk and of sugar. It is possible in many cases to feed babies successfully by this method; but it has its limitations, in that it is not at all elastic, and in many cases the ratios which one would like to have between the fat and the protein in the mixtures cannot be obtained, owing to the fact that if the milk is diluted one third or one half, as the case may be, the fat and the protein will each be diluted in the same proportion. In whole milk dilutions, therefore, the ratio between the fat and the protein will always be the same, and it is impossible to feed high fats by the use of this method, as the fat content of the milk is so much reduced by dilution. It does not apply so well to very young babies as do the other methods of milk modification, as the usual dilution is so great that the fat percentage of the resulting mixture is much lower than the baby might be able to take with advantage. In normal babies after the eighth or ninth month it is, however, the method of choice, as the dilution for these older babies is so slight that the fat percentage is not much reduced. There is no question, however, but that many young babies may be successfully fed in this way. The chief objection to it is that it is not comprehensive or elastic enough to furnish us with certain combinations of the food elements that we may need, and every practitioner should have in his armamentarium other methods besides this one. Even if whole milk dilutions are used and no matter how much infant feeding is simplified by their use, it is always well to keep track of the approximate percentage of each food element in the mixture. It is not possible or desirable to get away from a certain amount of calculation; and a knowledge of the percentage composition of the food acts as a check on what is being done. No matter what method of milk modification one adopts, in order to have any idea whatsoever about the possibilities of his mixture he must have at least approximate knowledge of its elementary components (fat, sugar and protein). The easiest way to have this knowledge is to think and speak in terms of percentages. Whole milk dilutions may be used in either one of two ways; the usual procedure being the first:

1. The desired number of ounces of milk and water plus the desired number of tablespoonfuls of sugar are prescribed; then the percentage composition of the mixture is calculated. In using whole milk dilutions one does not usually pick out in advance the percentage composition of the formula, as in many cases he will have picked out a formula which cannot be obtained by these methods. After a certain amount of experience in using this method, one knows without calculation about what the percentage composition of any given dilution of whole milk is, and he expresses his formula in terms of ounces of milk and water and tablespoonfuls of sugar rather than in terms of percentages. In order to proceed rationally, in order to have a clear conception of what he is doing, and especially in order to keep his food elements in mind, he must have an idea of the percentage strength of his mixture. Every competent feeder of infants has this knowledge, whether he expresses it on paper or not.

Let us suppose that the baby is being fed on whole milk, 36 ounces; water, 12 ounces, and lactose (milk sugar), 4 level tablespoonfuls. Then, as whole milk contains fat, 4 per cent.; sugar, 4.5 per cent., and protein, 3.2 per cent., we are giving 36/48 or ¾ whole milk, which equals ¾ of 4 = 3 per cent. of fat in the mixture; ¾ of 4.5 = 3.3 per cent. of sugar in the mixture, and ¾ of 3.2 = 2.4 per cent. of protein in the mixture.

A level tablespoonful of lactose added to a 48 ounce mixture raises the sugar percentage 0.8 per cent. (Table 1). Therefore, using 4 level tablespoonfuls of dry lactose, we have added 3.2 per cent. of sugar to the mixture which, plus the sugar that has already been put in with the milk (3.3 per cent.), gives 5.5 per cent. total sugar, and the baby is getting: fat, 3 per cent.; sugar, 5.5 per cent., and protein, 2.4 per cent.

The same method is used in figuring any whole milk dilution.[1]

Level tablespoonfuls of sugar are best calculated by the use of the sugar table, and ordinarily I believe it is best to use level tablespoonfuls instead of rounded, as more accuracy is obtained in this way. If rounded tablespoonfuls were used, the calculation would be a little different. Suppose we had used in the foregoing formula 3 rounded tablespoonfuls of lactose. A rounded tablespoonful of lactose weighs one-half ounce; therefore we have added 1½ ounces of lactose. To transfer this to percentages, 1.5/48 × 100 = 3.1 per cent. sugar added.

Table 1 will be found convenient to remember; it is, I think, the easiest way to calculate sugar.

TABLE 1.—CALCULATION OF SUGAR

One level tablespoonful of lactose raises the sugar percentage:
2.40 in a 16 ounce mixture
2.00 in a 20 ounce mixture
1.60 in a 24 ounce mixture
1.20 in a 32 ounce mixture
1.00 in a 40 ounce mixture
.80 in a 48 ounce mixture

Sucrose (cane sugar) is somewhat heavier than lactose. Dextrimaltose is somewhat lighter (Table 2).

TABLE 2.—COMPARATIVE WEIGHT OF SUCROSE, LACTOSE AND DEXTRIMALTOSE

	Sucrose Gm.	Lactose Gm.	Dextrimaltose Gm.
1 level tablespoonful	15	10	9
1 rounded tablespoonful	25	16	14

MEASURES

3 level teaspoonfuls = 1 level tablespoonful
2 level tablespoonfuls = 1 large kitchen spoonful

It is not necessary, however, to make special calculations for sucrose or for dextrimaltose; it is usually accurate enough to calculate as if for lactose and then, if using sucrose, to use a little less than the calculation calls for; if using dextrimaltose, a little more.

2. The second way of using whole milk dilutions is with the aid of a table and is not quite so practical as the first method. In any whole milk and water dilution, if five six-

1. In using this method there is no necessity of being too accurate: for example, supposing we were using 10 ounces of milk and 22 ounces of water in a mixture, it would be perfectly correct to call this one-third milk, or fat, 1.3; sugar, 1.5; protein, 1.1.

teenths of the mixture is milk, that is, 5 ounces of milk in a 16 ounce mixture, and the rest water, the percentages are: fat, 1.25; sugar, 1.40; protein, 1.00. Similarly, if more milk is added, the percentages are as given in Table 3.

TABLE 3.—PERCENTAGES OF FAT, SUGAR AND PROTEIN, ACCORDING TO PROPORTION OF MILK IN MIXTURE

Milk	Fat	Sugar	Protein
6/16	1.50	1.70	1.20
7/16	1.75	2.00	1.40
8/16	2.00	2.25	1.60
9/16	2.21	2.50	1.80
10/16	2.50	2.80	2.00
11/16	2.75	3.00	2.20
12/16	3.00	3.30	2.40

The amount of sugar necessary to add can be determined by referring to the sugar table (Table 1). The table of whole milk dilutions is calculated on the basis of sixteenths. Of course, if one is dealing with a 32 ounce or a 48 ounce mixture, the fraction 5/16 or 9/16, etc., is multiplied through by 2 or 3, as the case may be; that is 5/16 is the same as 10/32 or 15/48. Proportionate calculations can be made for 24 ounce or 40 ounce formulas; that is, in a 24 ounce mixture the amount of milk required to give the same percentages would be 1½ times what it would be for a 16 ounce mixture, or in a 40 ounce mixture it would be 1¼ times what it would be for a 32 ounce mixture. Thus we can accurately figure from this table 16, 24, 32, 40 and 48 ounce mixtures, which are the most common ones used.

TOP MILK (CREAM) DILUTIONS

The top portions of a quart of milk, after it has been allowed to stand about six hours, contain varying amounts of fat, as in Table 4.

TABLE 4.—AMOUNT OF FAT IN TOP MILK *

Top 2 ounces mixed contain	24.0% fat
Top 3 ounces mixed contain	22.5% fat
Top 4 ounces mixed contain	21.4% fat
Top 5 ounces mixed contain	19.2% fat
Top 6 ounces mixed contain	16.8% fat
Top 7 ounces mixed contain	15.0% fat
Top 8 ounces mixed contain	13.3% fat
Top 9 ounces mixed contain	11.5% fat
Top 10 ounces mixed contain	10.5% fat
Top 12 ounces mixed contain	9.0% fat
Top 14 ounces mixed contain	7.8% fat
Top 16 ounces mixed contain	7.0% fat
Top 18 ounces mixed contain	6.3% fat
Top 20 ounces mixed contain	5.8% fat
Top 22 ounces mixed contain	5.4% fat
Top 24 ounces mixed contain	5.0% fat
Top 26 ounces mixed contain	4.7% fat
Top 28 ounces mixed contain	4.5% fat
Top 30 ounces mixed contain	4.3% fat

* From Morse and Talbot's "Infant Feeding."

It is possible by different dilutions of these creams of varying fat percentage to secure mixtures containing more fat than is possible with the use of whole milk dilutions. High fats and rather low proteins are obtained by the use of this method of modification, whereas by the use of whole milk dilutions, low fats and relatively high proteins are obtained, as we have seen. As may be seen from the table, there are a good many different strengths of cream which may be used; practically it will be found best to confine oneself to the use of the top 10 ounces, top 16 ounces and top 24 ounces, containing 10, 7 and 5 per cent. of fat, respectively. The amounts of sugar and of protein contained in these three different creams vary a little, as shown by Table 5; but the variations are so slight that they may be disregarded, and for practical purposes the sugar and protein content of the various creams may be considered to be 4.50 and 3.20 per cent., respectively.

In using these three creams, the possible combinations which would be of practical value in infant feeding are as given in Table 6.

Surgar may, of course, be added up to any desired percentage, using the same sugar table as for whole milk dilutions.

This method of milk modification is employed considerably, and when used with intelligence carries with it no objections. It is not at all uncommon, however, to see mixtures containing 5 or 6 per cent. of fat obtained by this method, which is, of course, quite unsuitable for any baby. If cream dilutions are used, the fat content of the original cream and of the resulting mixture must be borne carefully in mind. Many men forget this. It is possible, of course, in using this method, to get innumerable formulas by various dilutions of 6, 8 and 12 per cent. creams, or by dilutions of the bottom milk after certain amounts of the cream have been removed; but the introduction of so many different strengths of cream and of milk makes such a complicated array of figures which are so difficult to remember, that it is best for practical purposes, if using this method, to confine onself to dilutions of 10, 7 and 5 per cent. creams, as given above. The use of even

TABLE 5.—COMPOSITION OF TEN, SEVEN AND FIVE PER CENT. CREAMS *

	Fat	Sugar	Protein
10% cream	10.00	4.40	3.25
7% cream	7.00	4.45	3.40
5% cream	5.00	4.50	3.50

* From Morse and Talbot's "Infant Feeding."

these three strengths of cream introduces an unnecessary complication, as any mixture that can be obtained by these methods can likewise be obtained by the gravity cream and skimmed milk method by using only one standard strength of cream, in combination with skimmed milk.

GRAVITY CREAM AND SKIMMED MILK MIXTURES

The method of gravity cream and skimmed milk mixtures is the method of milk modification that is the most adaptable to the needs of various babies. In one respect it is more complicated than the other methods, as instead of using simply dilutions of milk or of cream, when we have but one diluted factor to consider, we have here two diluted factors. The purpose of this method is to furnish a means of obtaining

TABLE 6.—COMBINATIONS OF TEN, SEVEN AND FIVE PER CENT. CREAMS OF PRACTICAL VALUE

Combination	Fat	Sugar	Protein
Ten per cent.:			
Cream, 1 part; water, 2 parts	3.3	1.5	1.1
Cream, 1 part; water, 3 parts	2.5	1.1	.80
Seven per cent.:			
Cream, 1 part; water, 1 part	3.50	2.25	1.60
Cream, 1 part; water, 2 parts	2.50	1.50	1.10
Cream, 1 part; water, 3 parts	1.8	1.10	.80
Five per cent.:			
Cream, 2 parts; water, 1 part	3.2	3.00	2.2
Cream, 1 part; water, 1 part	2.50	2.25	1.60
Cream, 1 part; water, 2 parts	1.70	1.50	1.10

practically any combination of the food elements that we desire. Most of the protein is furnished by the skimmed milk; then enough cream of a known fat content (16 per cent.) is added to supply the required fat percentage. It is inevitable in any such method as this that there should be a certain amount of calculation; we could not speak simply in terms of so much cream, skimmed milk, water and sugar, and have any idea whatever of what we were giving to the baby. We must speak in terms of percentages always in using this method.

My own feeling is that this is the best method of milk modification for general use. It does not apply to very ignorant patients, who have not the intelligence or the desire to go through the procedure involved; for these, whole milk dilutions must be used. Most mothers or nurses will be able to handle gravity cream and skimmed milk dilutions without trouble, however, and the amount of calculation involved for the practitioner is not at all difficult or complicated when it has been once mastered. It is a most practical and intelligent way of feeding, and enables the practitioner to change the amounts of protein and of fat in his mixtures much more easily than by any other method. It tends to do away with empiricism, and tends to make those using it think more accurately in terms of the food elements than they would otherwise. Its disadvantage is that there is more calculation involved in it than in the other two methods of milk modification. If it is worth while, if it offers advantages, and I believe it does, the small amount of extra trouble involved should not count against it.

Let us consider, for a moment, what we mean by gravity cream and skimmed milk. After a quart of milk in the ordinary milk jar has stood about six hours, the cream comes to the top, and is separated from the milk by a fairly definite line known as the cream line. All this cream is known as gravity cream. This will usually amount to about 6 ounces. All the cream down to the cream line is then gravity cream, and contains: fat, 16; sugar, 4.5, and protein, 3.2 per cent. What is left behind is the "skimmed milk," which contains: fat, 0; sugar, 4.5, and protein, 3.2 per cent. These figures are not strictly accurate, but the errors in one counterbalance those in the other. "Skimmed milk" actually contains a little fat, but for practical purposes this may be disregarded. The advantages of using "gravity" cream instead of creams obtained in other ways is that it does away with confusion, and we have simply to remember that the cream we are dealing with always contains 16 per cent. of fat instead of trying to remember the fat content of several different layers of cream, as is done by the "top milk" method. The best method of separating the gravity cream from the skimmed milk is to dip it off with a little dipper devised by Dr. Henry Chapin of New York, and called, after him, the "Chapin dipper." This can be obtained at any large drug store. Pouring can be used if no dipper is obtainable, but it is not quite so accurate. An important practical point to remember is to tell the mother to remove all the cream on the quart, and to explain to her carefully what gravity cream is. Otherwise she is very likely, supposing the formula calls for 3 or 4 ounces of cream, to take off simply the top 3 or 4 ounces, and use this, in which case she would be using a 20 or 22 per cent. cream, and would be putting more fat in the mixture than was prescribed. All the cream down to the cream line should be removed, put into a bowl and mixed; then the required number of ounces is taken from this.

The easiest way of calculating gravity cream and skimmed milk mixtures is by the use of a table of factors, which can be carried in the pocket or notebook on a little card, and which is easily memorized after it has been used a few times. By its use all the necessary calculation can be done in the head. The question of calculation is what has deterred many men from using the gravity cream and skimmed milk method, and it is true that the long way of calculating, figuring each quantity out step by step, is rather laborious. Nor have the various algebraic equations which have been proposed from time to time helped the situation; they have made it more complicated. The method about to be described is really practical and simple, and the calculation involved is so easy that no one need be daunted by it, no matter how hazy he may be with regard to mathematics. By its use we are confined to 16, 20, 24, 32, 40 and 48 ounce mixtures; but as these are the mixtures ordinarily used, this is not a disadvantage. The basis of the method is that in these mixtures certain constant simple ratios exist between the fat percentage desired and the number of ounces of gravity cream required to get it; also, definite ratios exist between the protein percentage desired and the number of ounces of cream plus skimmed milk required to get it.

PRINCIPLES OF CALCULATION

1. *Amount of Cream.*—In a 16 ounce mixture the number of ounces of gravity cream required is always the same as the fat percentage desired. In a 32 ounce mixture the number of ounces of gravity cream required is always twice the fat percentage desired; in a 48 ounce mixture, three times. There are similar factors for the other mixtures (20, 24 and 40 ounce mixtures, Table 7). This does away with all paper calculations, as the whole thing is so simple that it can be done in the head in a moment.

TABLE 7.—FACTORS

	Fat Factor *	Protein Factor †
16 ounce mixture	1.00	5.00
20 ounce mixture	1.25	6.25
24 ounce mixture	1.50	7.5
32 ounce mixture	2.0	10.0
40 ounce mixture	2.50	12.5
48 ounce mixture	3.0	15.0

SUGAR TABLE

One level tablespoonful of lactose raises the sugar percentage:

2.40 per cent. in a 16 ounce mixture
2.00 per cent. in a 20 ounce mixture
1.60 per cent. in a 24 ounce mixture
1.20 per cent. in a 16 ounce mixture
1.00 per cent. in a 40 ounce mixture
.80 per cent. in a 48 ounce mixture

EXAMPLE

Suppose we wish a 32 ounce mixture containing: fat, 2.5; sugar, 6, and protein, 1 per cent.

To determine:

1. *Gravity cream:* 2.5 × 2 (fat factor for 32 oz.) = 5 oz. gravity cream.
2. *Skimmed milk:* 1.00 × 10 (protein factor for 32 oz.) = 10 oz. skimmed milk plus cream. Minus 5 oz. cream = 5 oz. skimmed milk.
3. *Sugar:*
   (*a*) Sugar furnished by skimmed milk and cream: 1.00 (protein percentage desired) × 1½ = 1.50% sugar.
   (*b*) Sugar to add as dry lactose: 6.00 — 1.50 = 4.50% more to be added. One level tablespoonful of dry milk sugar added to a 32 oz. mixture raises the sugar percentage 1.2 per cent. Therefore add 4 level tablespoonfuls of milk sugar.

* Multiply by percentage of fat desired. This gives ounces of gravity cream to use.

† Multiply by percentage of protein desired. This gives ounces of gravity cream plus skimmed milk to use.

2. *Amount of Skimmed Milk.*—In a 16 ounce mixture the number of ounces of skimmed milk, plus cream required, is always 5 times the percentage of protein desired; in a 32 ounce mixture, 10 times; in a 48 ounce mixture, 15 times. Similar factors exist for the other mixtures (20 ounce, 24 ounce, etc.). The number of ounces of cream and the number of ounces of skimmed milk plus cream having been determined, the amount of skimmed milk necessary is easily obtained by subtracting the one from the other.

3. *Amount of Sugar to Add.*—Some sugar is, of course, put in with the cream and skimmed milk, as both of these contain sugar. In order to know how much more sugar to add in the form of dry sugar to bring the total up to the desired percentage, it is necessary first to know what percentage the cream and skimmed milk furnished. The percentage of sugar furnished by the cream and skimmed milk is always 1½

times the percentage of protein desired. The extra sugar to be added is figured from the sugar table, showing how much the percentage of sugar is increased in any mixture by adding a level tablespoonful of sugar.

This is an accurate and at the same time an exceedingly simple method, once its details are understood, and by its use the gravity cream and skimmed milk method of modification should be robbed of its difficulties and be made practical for general use. If the reader will take the trouble to study it, he will see that this is true.

It seems to me that the best thing for the average practitioner to do is to learn the whole milk and the gravity cream and skimmed methods, discarding the method of top milk dilutions. He will then have at at his command a wide range of formulas, and if he desires to feed more fat to his babies than can be obtained by the whole milk method (which is undoubtedly serviceable in many cases), he can turn to gravity cream and skimmed milk mixtures. Any method of calculation seems complex and difficult to understand at first glance; at least it does to me in any textbook of infant feeding I may happen to pick up. Let me insist that no man can learn a method of calculating milk formulas by simply reading it over once or twice; he must take pencil and paper, sit down and figure a few sample formulas. Then he will have no trouble. It is worth while to be able to feed with accuracy. The old days of haphazard feeding have gone by; but there are altogether too many practitioners even now who do not know what they are feeding their babies; to them cream is simply "cream," irrespective of its fat content; many of them have not even a knowledge of the composition of whole milk. The obtaining of approximate accuracy in infant feeding is so easy that it seems a pity it should not be universally adhered to. I say "approximate accuracy," for of course it is not possible or necessary to secure absolute accuracy in any milk modification. The ingredients vary too much; and any chain is only as strong as its weakest link. Relative accuracy is what is desired, and in calculating formulas it is not necessary to pay much attention to insignificant fractions. *The ability to express in numerical terms the approximate amount of each individual food element in the baby's milk mixture seems to me to be a necessary fundamental of scientific infant feeding.*

Expression in percentages has been usually employed. Expression in grams or in drams would be equally as good, if one were accustomed to think in that way. The "percentage method," so called, is really not a method of feeding; it is a method of expression merely, and it does not demand that those who follow it should feed high or low fats, sugars or proteins; it merely requires that cognizance should be taken of the amounts of these elements that are to be fed. The expression of these amounts in terms of percentages is usually the most convenient notation to adopt.

SUMMARY

There are several methods of milk modification in good use, and it is not of great importance which one is used, provided the physician gives enough food in total quantity and the proper combination of the individual food elements to suit the digestion of the baby he is dealing with, and that he knows approximately the amount of each food element in the mixture, in order that he may vary these quantities at will, that he may be able to proceed in a rational manner, and that he may be able to express clearly to others, in the exact language of figures, what he has done.

The modification of milk is the mechanical part of infant feeding. It is not the calculation that is difficult—any inexperienced medical student can quickly learn milk modification and calculation: the part of infant feeding that is difficult, that requires judgment and experience, that often eludes many of us in spite of years of experience with many babies, *is knowing when to feed what.*

99 Commonwealth Avenue.

ACUTE INFECTION OF THE THYROID GLAND

CHARLES REID EDWARDS, M.D.
BALTIMORE

The infrequency of acute inflammation of the thyroid gland, either as a primary infection or as a complication to other inflammatory processes, whether local or constitutional, has prompted me to report four cases and also to review some of the literature on this subject. This review, even though limited, establishes the fact that relatively few acute inflammatory conditions of the thyroid gland have been reported.

In dealing with the subject I have made no attempt to collect data relative to the acute infections complicating goiter—strumitis—but to review that dealing with infections of the normal thyroid gland—thyroiditis.

The fact that the thyroid is one of the ductless glands, well isolated from surrounding tissue by a dense capsule, enjoying a bountiful blood supply, and with a lymphatic drainage, rather independent of the lymphatics of the neighboring structures and containing a colloidal material rich in iodin, seems to favor it as an organ rather invulnerable to invasion by pyogenic organisms as compared to other glandular structures.

Primary acute inflammation of the thyroid gland—thyroiditis—is almost never seen. Acute inflammation of the goitrous gland—strumitis—may be occasionally observed. In general pyemia with involvement of various organs, the thyroid is rarely included, as it is one of the most resistant of all the tissues to infection. However, in connection with certain infectious diseases, acute inflammation of the thyroid has been described, so we find an occasional rare case of thyroiditis reported following such infections as puerperal fever, influenza, typhoid fever, diphtheria, erysipelas and similar infections. These acute inflammations, when they do occur, are usually purulent. Pus accumulation (abscess) is found in the majority of these cases. According to Crotti, "acute thyroiditis consecutive to infectious diseases whose bacteriologic factors are still unknown, as in scarlet fever, measles, parotitis and acute inflammatory rheumatism, do not suppurate." While these possibilities have been mentioned by most authors, a search of the pathologic index of cases treated in any modern hospital reveals few if any cases which have been complicated by a suppurative process in the thyroid.

The avenues of infection of the thyroid are: (1) by contiguity; (2) by direct inoculation, and (3) hematogenous. That suppurative thyroiditis is seldom the result of similar processes of contiguous structures is amply demonstrated by its rarity. Skin lesions, tuberculous and nonspecific cervical adenitis, acute pharyn-

gitis, laryngitis, tonsillitis, peritonsillar abscesses, and the two anginas, Vincent's and Ludwig's, are all common, but how often do we hear of suppurative thyroiditis complicating either or any of them? Suppurative thyroiditis, the result of direct inoculation, while quite possible as the result of a stab wound, is readily understood, in that any structure may be subject to a similar injury, but deserves only mention in passing.

Those of hematogenous origin would merit the most consideration, and it is more than probable that the majority of suppurative thyroiditides have their origin in this manner. Again to quote Crotti:

> Kocher—before he was supported by bacteriologic knowledge—maintained that every case of acute thyroiditis or strumitis was due to metastasis of an infectious agent located somewhere in the organism, or originating in the intestinal canal. Later bacteriologic findings maintained the correctness of his view.
>
> Thyroiditis may occur spontaneously without any apparent cause, or as a complication of another infectious process. This happens especially during convalescence from an acute illness, and is less frequent in chronic cases.
>
> As the thyroid has no excretory canal and does not come into contact with a mucous membrane of any sort, if an inflammation sets in and if the possibility of an infection by direct traumatism or by propagation from the neighboring tissues has been excluded, there remains only one possible way by which the micro-organism might have traveled, and that is by the hematogenous route. Bacteria thus thrown into the blood current settle in the thyroid.

In three of the four cases reported below the infection followed a respiratory inflammation; and in the fourth case, while the thyroid complication is coincident with an abdominal inflammation, the fact that there was a very transient and mild inflammation of the pharynx cannot be overlooked.

The onset of the symptoms in all of these cases is usually sudden. There is pain in the neck, frequently referred to the ear, teeth, shoulder, arm or chest, depending on the amount of pressure produced by the inflammation and furthermore on the toxic effect of the micro-organism. This is associated with an elevation of temperature and a rapid pulse, a persistent cough with pronounced changes in the voice, dyspnea, which at times may be so severe as to require tracheotomy, painful swallowing, and extreme restlessness.

The leukocyte count is usually increased unless there has been a profound infection of long duration.

The physical examination reveals exquisite tenderness over the anterior portion of the neck below the larynx. There is usually swelling, which may be localized or diffuse; redness, and a marked induration, which sometimes makes it difficult to differentiate from woody phlegmon. There is usually rigidity of the muscles of the side affected, so that if only one lobe is inflamed, the head will be turned toward that side. Palpation of the gland is usually unsatisfactory because of the pronounced tenderness.

REPORT OF CASES

CASE 1.—G. S., a girl, aged 4, entered the hospital, April 12, 1912, suffering from empyema. She was operated on and was making a satisfactory recovery when, a few days after the operation, her mother became dissatisfied because of the hospital treatment and separation from her child, and took the child home. A few days later the child developed a sudden pain in her throat, became very restless, and showed marked dyspnea, rapid pulse rate, acute elevation of temperature, and extreme cyanosis. Dyspnea was so pronounced that a tracheotomy had to be performed at the patient's home. She was then brought to the hospital, where an abscess of the thyroid was drained. The dyspnea was relieved primarily by the tracheotomy, and after the incision of the thyroidal abscess, the patient breathed perfectly well without the tube. The patient then made an uneventful recovery, and was able to return to her home in two weeks.

CASE 2.—Mrs. J. B., white, aged 42, who was suffering from an attack of influenza of three weeks' duration, during which time the temperature had ranged from 99 to 101 F., and who was regarded as convalescent, suddenly became conscious of very severe pain in the throat which was followed by extreme shortness of breath, hacking cough, rapid pulse, and a temperature of 100. On admission to the hospital, physical examination was rather unsatisfactory in that the patient was suffering from extreme dyspnea and was quite alarmed over her condition; but she exhibited marked rigidity of the neck muscles of the right side with brawny induration over the region of the thyroid, exquisite tenderness over the entire anterior region of the neck being localized over the thyroid gland. The head was turned to the right side. Examination of the throat disclosed a slight pharyngitis. Under 0.5 per cent. procain anesthesia a transverse incision was made and the thyroid gland exposed. On incision of the capsule of the gland, pus escaped and the patient was immediately relieved of her respiratory distress. Drainage was provided for by a small rubber tube; the tissues were closed about the drains, and the patient made an uneventful recovery and was able to leave the hospital within three weeks.

The foregoing two patients were operated on by Dr. A. M. Shipley.

CASE 3.—Mrs. L. L., aged 37, white, entered the hospital, July 15, 1919, for incomplete intestinal obstruction due to adhesions resulting from a hysterectomy performed three years before. On the fifth day following the operation, during which time the patient exhibited a normal chart and was entirely comfortable, she developed a sudden chill accompanied by pain in the neck and associated with a temperature of 102 F. There was a recurrence of chill the following day. Examination of the wound revealed nothing abnormal; there was no drainage instituted following the laparotomy. Examination of the urine was negative. The patient had had an attack of malaria some years before, so repeated examinations of the blood were made, but did not disclose any plasmodia. A blood culture was negative. There was a slight leukocytosis. Laryngologic examination was negative, although the patient still complained of pain in the throat and a hacking cough. After quinin and acetylsalicylic acid therapy the patient made an uneventful recovery and was discharged from the hospital at the end of two weeks, having exhibited normal temperature and pulse rate during the last week in the hospital. Within four days after returning to her home, however, she had a recurrence of the pain in the neck, with a temperature of 100 F. She was again admitted to the hospital and complete examination made, including roentgenoscopy of the sinuses and teeth. Two teeth with abscesses at their roots were discovered and subsequently removed, but without any effect on the painful condition over the region of the thyroid. Examination of this region of the neck was absolutely negative except for the fact that there was tenderness on pressure over the thyroid gland. The patient was held under observation for a week, at the end of which time she developed a brawny induration over the thyroid with marked redness, and exquisite tenderness on the slightest manipulation. Dyspnea was very pronounced, and the temperature was 102 F. Under gas anesthesia the neck was opened by a transverse collar line incision; no pus was found before the thyroid was exposed. The capsule of the thyroid was opened, disclosing numerous necrotic areas in the gland substance with a marked parenchymatous swelling. Drainage was provided for by a small rubber tube, and gutta-percha; the tissues were closed about the drains. The patient returned to her room entirely comfortable, there being no dyspnea. The staphylococcus was isolated in culture from the thyroid. The patient made a satisfactory recovery and was able to return to her home within two weeks.

CASE 4.—E. R., a white man, aged 55, had suffered an attack of influenza while in Cuba in the early autumn of 1919. Following the influenza he had pleurisy with effusion, and

aspiration was performed a number of times for that condition. He returned to the United States convalescent, but continued to experience an irritating cough with an occasional slight attack of laryngitis. About the middle of October he noticed a small swelling in the lower anterior portion of his neck, and was unable to wear a collar or to keep his shirt band buttoned. The cough became more exaggerated, and on October 21 he entered the hospital for treatment. Examination of his neck revealed a small globular mass in the median line of the neck about one-half inch below the lower limit of the thyroid gland. The skin was firmly attached to this mass, and there was fluctuation and local rise of temperature. There was no dyspnea, but a very noticeable irritating cough. Under 0.5 per cent. procain anesthesia the abscess was opened and was found to originate in the thyroid gland. Culture of the exudate disclosed *Staphylococcus aureus*. The abscess had dissected its way from the thyroid through the intramuscular space, pointing directly in the median line. Drainage was provided for by a small rubber tube, and the incision was closed about the drain. The patient made a rapid recovery.

COMMENT

It has been possible to follow the courses of all of these patients for definite periods. The first three are still living and entirely well, there being neither deficiency of secretions nor an oversecretion of the thyroid. The fourth patient was last heard from six months after the operation, at which time he suffered no ill effects from the operation.

33 West Preston Street.

TYPHOID SPINE *

BARCLAY W. MOFFAT, M.D.
RED BANK, N. J.

The incidence of typhoid spine—first described by Gibney in 1885—is given by one observer [1] as one in 1,800, and by another [2] as one in 6,905 cases of typhoid fever. The greater proportion occurs in males (ninety-two to sixteen in Murphy's 108 cases), owing to their greater liability to trauma, and in the lumbar region (fifty-nine against thirty-nine in other regions, same series), because these vertebrae suffer greater strain [3] and also contain more cancellous [4] bone, a favorable nidus for *B. typhosus*. In cases of typhoid, necropsies have demonstrated its presence in this situation, though no spinal symptoms were noted throughout the course of the disease.

The pathologic process of the condition has been classified by Terrillon [5] as (1) simple periostitis; (2) osteitis with subperiosteal abscess, and (3) periostitis with osteitis.

Osler [6] maintained that the disease was purely a neurosis. The one necropsy reported—that by Rugh [7] in 1915—showed that the disk between the third and fourth lumbar vertebrae was missing and had been replaced by a bony overgrowth. On section, connective tissue, rich in blood supply sufficient to cause ankylosis, was found replacing the cartilage and bridging over the space of the disk.

The few roentgen-ray findings available have varied. Murphy thus summarizes them:

Two cases, four foci punched out lesions.
Three cases, no findings.
Two cases, deposits of new bone.
Two cases, lack of clearness of intervetebral disks.
One case, distinct changes.
One case, actual bone destruction.
One case, narrowing of disk.

Pancoast [8] describes the roentgen-ray findings as a narrowing or obliteration of the intervertebral space. The clinical picture as reported in cases varies with this pathology.

The onset of spinal symptoms varies in time from the third week of the disease to four years after its termination. Bohmansson [9] points out that *B. typhosus* may be latent in an individual giving a negative Widal reaction until stimulated by vaccine treatment, and may still give rise to symptoms. He reports such a case presenting acute hip symptoms, and concludes that typhoid bone lesions may result in a case which has never presented the clinical picture of typhoid fever at any time.

Murphy, however, reports a case in which the onset of the fever occurred in May, though the spinal symptoms did not appear until September of the same year, and explains this by deposition of the bacillus in the vertebrae from the blood of the patient as a carrier at the time of the onset of the spinal symptoms, because of trauma which provided a favorable soil.

The average case begins with a gradual onset, usually after the febrile state of the disease has passed. The temperature is elevated to a point usually less than 103, and the rise in pulse rate accompanies it. The leukocyte count ranges from 6,000 to 18,000. The patient is anxious, and there is usually great mental irritability.

The complaint is usually of pain at the site of the lesion on twisting or jarring, though this may be obscured by the referred pains. The spine is carefully guarded against abrupt movements.

At the lesion, the muscles are rigid and the spinous and transverse processes are painful on pressure. There is found a kyphosis in comparatively few instances. In only four cases has there been suppuration requiring drainage.

The referred symptoms sometimes seen are severe radiating pains to one or both sides of the chest, abdomen or scrotum, and either arm or leg. Less commonly there has been described a rhythmic contraction synchronous with the pulse, believed to be due to pressure through masses of exudate about the spinal roots at the foramina.[3] In one case these contractions were stopped by pressure on the abdominal aorta. In a few cases there has been described hyperesthesia or paresthesia. Muscular atrophy is infrequent. The knee jerks are usually exaggerated.

The differential diagnosis is to be made from neurasthenia, tuberculosis of the spine (Pott's disease) and lumbago.[2] The relief from fixation is not immediate, as in tuberculosis of the spine, nor absent, as in neurasthenia. Lumbago is transient.

Spondylitis deformans could hardly be confused with typhoid spine, the lesion in the latter being more circumscribed.

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* Read before the Annual Clinical Conference of the Hospital for Ruptured and Crippled, Nov. 19, 1920.

1. Galli, Giovanni: Ueber Spondylitis typhosa, München. med. Wchnschr. **62**: 501 (April 13) 1915.
2. Murphy, J. B.: Bone and Joint Disease in Relation to Typhoid Fever, Surg., Gynec. & Obst. **22**: 119 (Aug.) 1916.
3. Carnett, J. B.: Typhoid Spine, Ann. Surg. **61**: 456-471 (July) 1915.
4. Silver, David: Typhoid Spine: Report of a Case with Radiographic Evidence of Structural Change; Analysis of the Reported Cases; Complete Bibliography, Am. J. Orthop. Surg. **5**: 194 (Oct.) 1907.
5. Terrillon: Des periostities consecutives à la fièvre typhoïde, Progr. méd. **12**: 285 (April 12) 1884.
6. Osler, William: On the Neurosis Following Enteric Fever, Known as the Typhoid Spine, Johns Hopkins Hosp. Rep. **4**: 72, 1895.
7. Rugh, J. T.: Report of a Case of Typhoid Spine with Autopsy Findings, Am. J. Orthop. Surg. **13**: 289-292 (Oct.) 1915.
8. Pancoast, H., in Frazier: Surgery of the Spine and Spinal Cord, New York, D. Appleton & Co., 1918, p. 223.
9. Bohmansson, Gusta: On the Diagnosis and Therapy of Bone Typhoid, Ann. Surg. **69**: 245 (March) 1919.

The prognosis as to life is, of course, perfectly good. There is often more or less complete ankylosis, owing to absorption of the disks. Relapse to the extent of a return of pain may follow too early discarding of support.

The treatment is fixation by plaster-of-Paris jacket, traction or brace.

REPORT OF CASE

The patient first came in for relief of back pain, in the service of Dr. Royal Whitman, and was seen by Dr. A. H. Cilley, through whose courtesy the case is reported. The history given was of a typical case of typhoid beginning March 6, 1920, in a neighborhood epidemic. The fever ran the usual course; but, on sitting up during convalescence, the patient experienced a severe pain in the right lumbar flank and a milder discomfort in the lumbodorsal region. This lasted two weeks and was followed by pain in the left lumbar flank, the spine pain becoming more severe. After two weeks this left lumbar pain subsided and the spine pain became excrutiating. At this time a kyphosis was noticed at the site of the pain.

On examination, the patient was extremely nervous and apprehensive; the pupils were widely dilated, there were dark rings about the eyes, and the face was flushed. The pulse ran about 110. Locally, there was spasm and rigidity of the muscles about the dorsolumbar region, and a well marked kyphosis apparently involving the tenth dorsal to the second lumbar vertebra. This was painful to pressure. There was no local heat, redness or swelling. There were no referred symptoms.

A diagnosis of typhoid spine was made and a jacket applied in ventral suspension, pressure being exerted on the kyphos during its application.

A moderate degree of correction was obtained, and the pain subsided within forty-eight hours. Two weeks later a second jacket was applied, giving full correction, which again was worn for two weeks, when a third jacket in an overcorrected posture was applied and worn two months. The pain was entirely gone at this time, and the jacket was discarded. The kyphosis had been flattened out, and the muscular spasm, of course, was gone. There was limitation of motion in all directions, but this yielded to massage carried out three times a week for two weeks. Roentgenograms taken six weeks and four months after the onset of spinal pain were negative.

COMMENT

The interesting points seem to be: (1) the occurrence of the lumbar pains; (2) the formation of a kyphosis, though the roentgenograms were negative, and (3) the ease of reduction of the deformity.

The lumbar pains resembled, to some extent, acute rheumatic involvement in the history of their course, and apparently were not referred pains.

The kyphosis is explained by Murphy, who found it in seventeen of fifty-nine cases as due to periostitis with a consequent softening of the ligaments and disorganization of the disks. It is doubtful whether changes not apparent now to confirm this view in the case will be seen in a later roentgenogram.

The uneventful course and rapid recovery may be ascribed to the ease of reduction of the deformity and consequent early correction, before fixation has progressed to any great extent.

17 Broad Street.

Qualitative and Quantitative Errors of Diet.—The food of civilized man is presented to him in so appetizing and so concentrated a form that he is led to eat not only much that is bad for him, but also to consume an excess of it. The person endowed with a constitutionally clamant appetite is thus far defective as regards his instinct; he derives great pleasure from eating, and this leads him almost certainly, his inward monitor failing him, to injure his health by eating too much, and the better his digestion the more likely he is to do this.—*Med. Press*, July 14, 1920.

STUDIES OF THE NASOPHARYNGEAL SECRETIONS FROM INFLUENZA PATIENTS

PRELIMINARY REPORT ON CULTIVATION EXPERIMENTS *

PETER K. OLITSKY, M.D.
AND
FREDERICK L. GATES, M.D.
NEW YORK

In a preliminary report [1] in THE JOURNAL describing the effects produced in the lungs and blood of rabbits by an agent present in the nasopharyngeal secretions of patients within the first thirty-six hours of uncomplicated epidemic influenza, we stated that during the course of these experiments we had seen "in cultures, both from the lung tissue of affected rabbits and in the filtered nasopharyngeal washings from cases of influenza, tiny bodies, almost invisible, which decolorize by Gram's method, and which stain generally with difficulty with nuclear dyes." Further, in the more complete report on transmission experiments on rabbits with these nasopharyngeal secretions,[2] it was stated that while aerobic cultures of the affected lung tissue of rabbits were negative for ordinary bacteria, except in cases of obvious contamination, the results of anaerobic cultivation were to be described in another communication.

We now desire to report our observations on the cultivable bodies to which these references were made and which were first encountered in November, 1918, in anaerobic cultures of the filtered nasopharyngeal secretions of a case of epidemic influenza.

EXPERIMENTS AND RESULTS

The materials employed for the cultivation experiments were the filtered nasopharyngeal washings from patients in the early and late stages of uncomplicated epidemic influenza; filtered and unfiltered lung tissue from patients who had succumbed to secondary or concurrent pneumonias; filtered and unfiltered lung tissue from rabbits experimentally inoculated, and control specimens.

In the first cultivation tests, 1 c.c. of filtrate or 0.5 cm. cube of lung tissue was added to a large piece of sterile rabbit's kidney (from 0.6 to 0.8 gm.) in a 20 by 1.5 cm. test tube. These materials were then covered with about 10 c.c. of sterile human ascitic fluid of a p_H of from 7.8 to 8.0 but not of greater alkalinity. The tube contents were then overlaid with 2.5 c.c. of sterile liquid petrolatum and the tubes were stoppered with cotton and placed in an anaerobic jar as described by McIntosh and Fildes.[3] The establishment of anaerobic conditions in the jar was indicated by the decolorization of a tube of methylene blue in broth included with the cultures. In later experiments a layer of solid petrolatum was substituted for the liquid petrolatum so that the jar could be eliminated, and similar strict anaerobiosis of the medium could be maintained.[4]

The material was incubated at 37 C. for from eight to twelve days. On about the fifth day a slight haziness was noted, usually reaching upward 1 cm. from the kidney tissue level. This faint cloud became denser, reached its maximum about the eighth day, and by that time had extended upward to about 3 cm. from the bottom of the tube. The supernatant

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Olitsky, P. K., and Gates, F. L.: Experimental Study of the Nasopharyngeal Secretions from Influenza Patients, J. A. M. A. **74**: 1497 (May 29) 1920.
2. Olitsky, P. K., and Gates, F. L.: J. Exper. Med. **33**: 125 (Feb.) 1921.
3. McIntosh, J., and Fildes, P.: Lancet **1**: 768 (April 8) 1916.
4. Gates, F. L., and Olitsky, P. K.: J. Exper. Med. **33**: 51 (Jan.) 1921.

medium developed simultaneously a very faint opalescence, at times hardly discernible. After standing two weeks, the medium became clear, owing to the settling of the cloud to the region of the kidney tissue.

Film preparations made from the material at the very bottom of the tube—the most favorable part of the culture medium for this purpose—showed on staining with ripened alkaline (Loeffler's) methylene blue numerous minute bodies, stained purple, and distinct from the precipitated granules of protein matter. These bodies, which have been observed in numerous primary cultures and in several hundred subplants for as many as seventeen generations, are from 0.15 to 0.3 micron in length and are comparable in size to the globoid bodies found in poliomyelitis. Viewed with apochromatic lenses at 3,000 diameters, they appear to be elongated, their length being about twice to three times their breadth; hence they are bacilloid rather than coccoid. They often occur discretely, sometimes in diploform and rarely in short chain formation of three or four members. In some young cultures but more often in older ones, a clumped arrangement is discernible. These clumps range in size from that of a blood platelet to that of a polymorphonuclear leukocyte. In these masses, the individual bodies are distinct. In any case, the outline of each body is regular and the tendency to pleomorphism is not marked, although in some preparations an occasional longer body is to be seen. One culture is now in its seventeenth generation, and the form and size of the bodies therein are still similar to those in the initial culture.

When few in numbers, the bodies sometimes are obscured by protein or stain precipitate and to the unaccustomed eye they are made out with difficulty. In general they stain with difficulty with the usual dyes. Giemsa's and Manson's stains dye them a lavender shade, but are unsatisfactory on account of concomitant precipitation. For this reason carbolthionin (Nicolle), carbolfuchsin, steaming safranin and fuchsin are unsuitable also. They are decolorized by Gram's method. The counterstain, safranin, requires steaming. The negative reaction to Gram's stain is a constant feature of old and young cultures.

Initial cultures in a semisolid medium consisting of one part of agar to two parts of human ascitic fluid usually fail to show signs of growth. But subcultures do develop in this medium with the formation of minute colonies, too small to be exactly defined in the medium; the evidence of growth is usually noted by haziness or an even clouding of the medium from below upward to within 2 to 3 cm. from the surface.

In mass cultures, such as were employed by Flexner, Noguchi and Amoss[5] for growing the globoid bodies of poliomyelitis, a turbidity appears throughout the solid agar layer after the third day, and a diffuse though slight haziness of the fluid layer after the fifth day.

On account of their size, the dark field does not offer a satisfactory method for their detection or examination, because of their similarity in size to the familiar "dancing bodies" found also in control preparations.

Although growth is obtained in a medium containing carbohydrates and alcohols such as dextrose, maltose, lactose, saccharose and mannitol, these substances appear not to be attacked by the bodies. Gas is not formed, not is any odor detectable in the culture medium during growth.

The bodies are destroyed by heating at 56 C. for one-half hour and by chloroform vapor after from one to one and one-half hours' exposure. They are capable of growing in symbiosis with a number of ordinary bacteria, among which may be mentioned *B. pfeifferi*, the pneumococcus, *Streptococcus viridans, Streptococcus hemolyticus* and the staphylococci.

The cultivated bodies pass through V and N Berkefeld candles.

The bodies have been cultivated from the filtered nasal washings of patients in the first thirty-six hours of epidemic influenza, rarely from specimens taken in the later stages of the disease. They were not found in filtrates of lung tissue from patients who succumbed to secondary pneumonias. They were recovered in pure culture from the filtered and unfiltered lung tissue of rabbits and guinea-pigs inoculated with the filtered or unfiltered nasal washings from fresh influenza cases and from the lung tissue of rabbits injected with active material, which had been immersed in sterile 50 per cent. glycerol for nine months.

Similar cultivation of control materials, consisting of the filtered and unfiltered nasopharyngeal washings from healthy persons free from influenza, or from those suffering from coryza, lung tissue of normal rabbits, and lung tissue of rabbits suffering from respiratory affections such as "snuffles" or pneumonia uniformly failed to yield growths of the bodies.

The intratracheal injection in rabbits or guinea-pigs of washed mass cultures of these bodies is followed in from twenty-four to forty-eight hours by a temperature rise, conjunctivitis and leukopenia involving especially the mononuclears. This condition endures for from one to three days; thereafter the animals return to normal. If an animal is killed during this reaction, the organs are found to be normal with the exception of the lungs, which show edema and emphysema, and hemorrhages in the parenchyma and involvement of the trachea and bronchi in the process. From these lungs, the same bodies can be cultivated.

5. Flexner, Simon; Noguchi, Hideyo, and Amoss, H. L.: *J. Exper. Med.* **21**: 91, 1915.

SUMMARY AND CONCLUSION

From the filtered nasopharyngeal washings from early cases of uncomplicated epidemic influenza and from the lung tissues of experimental animals, we have cultivated minute bodies of characteristic morphology which are strictly anaerobic, are filtrable, and withstand glycerolation for a period of months.

The effects on the blood and in the lungs of rabbits and guinea-pigs injected with these bodies are similar to those produced by the filtered and unfiltered nasopharyngeal secretions from early cases of epidemic influenza.

BENCE-JONES PROTEINURIA

A REPORT OF THREE CASES WITH METABOLIC STUDIES

WALTMAN WALTERS, M.D.
Fellow in Medicine, the Mayo Foundation
ROCHESTER, MINN.

In 1847, Henry Bence-Jones reported before the Royal Society of London the finding of a peculiar form of protein in the urine in a case of osteomalacia fragilis rubra; the most characteristic feature of this protein was its behavior toward nitric acid. This reagent yielded a precipitate with the urine of the patient which dissolved on heating and reappeared on cooling, a reaction which led Bence-Jones to believe that it was not the ordinary serum albumin of nephritis. The kidneys were sound clinically. At necropsy the ribs were cut with the greatest ease, and the bodies of the vertebrae were capable of being sliced with a knife. Microscopically, the kidneys were normal.

Thirty-nine years passed before a second case was reported by Kühne,[1] who published the result of a urinalysis in which he rediscovered the reactions of Bence-Jones, and a diagnosis of osteomalacia was made clinically, but necropsy was not obtained.

Kahler,[2] in 1889, described a third case in which the diagnosis also was osteomalacia, since the urine gave Bence-Jones reactions; but at necropsy, instead of osteomalacia, multiple round-cell sarcoma, that is, multiple myeloma, was disclosed. Kahler suggested that Bence-Jones reactions might be of service in the diag-

1. Kühne, quoted by Hamburger (Footnote 7).
2. Kahler, O.: Zur Symtomatologie des multiplen Myeloms; Beobachtungen von Albumosurie, Prag. med. Wchnschr. **14**: 33-45, 1889.

nosis of multiple myeloma, and that possibly the other two cases of osteomalacia with proteinuria had been instances of this disease.

From 1889 to 1917, 205 instances of Bence-Jones proteinuria were reported, the greatest number being in cases of multiple myeloma. A summary and complete bibliography of the subject up to 1917 is contained

TABLE 1.—OCCURRENCE OF BENCE-JONES PROTEINURIA IN VARIOUS DISEASES

Multiple myeloma	80 per cent. of cases
Lymphatic leukemia	3 cases (Askanzy, Decostello)
Myeloid leukemia	3 cases (Boggs)
	1 case (Miller-Baetjer)
Myxedema	1 case (Fitz)
Exophthalmic goiter	1 case (Von Jaksch)
Carcinomatosis	1 case, primary carcinoma of stomach (Orum)
Nephritis	2 cases (Miller and Baetjer)
	1 case only instance of Bence-Jones proteinuria observed in a case of genuine nephritis; no bone lesions other than those of secondary anemia (Goat and Brewer)
Hypertension	5 cases, no albumin but casts (Miller and Baetjer)
Pyrodin poisoning	Experimentally produced in dogs

The origin of this protein is still in doubt; the most tenable hypothesis, that of Hopkins and Savory,[5] is that it represents either "normal, abnormal or aberrant stages of bone synthesis, the completion of which is hindered by indeterminate pathologic conditions."

Three cases of Bence-Jones proteinuria are herewith reported: one in a patient with an obscure diagnosis, one in a patient with a generalized carcinomatosis, and one in a patient with true multiple myeloma. Metabolic studies were made on each patient to determine variations in excretion on various diets. The quantitative estimation of Bence-Jones protein in each specimen of urine was determined by the method of Folin and Denis,[6] with the exception that the urine was kept at a constant temperature of 60 C. for three hours instead of for twelve hours.

REPORT OF CASES

CASE 1 (319680).—Mr. H. M. R., aged 41, registered in the Mayo Clinic, Sept. 24, 1920. At various intervals for the last three years, considerable amounts of albumin had been found

TABLE 2.—EXCRETION OF BENCE-JONES PROTEIN DURING THREE-HOUR INTERVALS IN CASE 1

	General Diet																	
	8/31/20 to 9/1/20		9/1/20 to 9/2/20		9/2/20 to 9/3/20		9/3/20 to 9/4/20		9/4/20 to 9/5/20		9/5/20 to 9/6/20		9/6/20 to 9/7/20		9/7/20 to 9/8/20		9/8/20 to 9/9/20	
Hours	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.
8 p.m. to 8 a.m.	1,455	10.43	640	6.46	1,150	8.72	1,150	8.26	1,050	8.19	675	2.39	850	17.85	845	9.21	995	9.36
8 a.m. to 11 a.m.	228	2.02	360	2.38	95	2.10	210	1.21	460	6.51	225	1.77	255	0.58	325	2.28	100	2.04
11 a.m. to 2 p.m.	380	2.48	375	1.89	120	2.13	250	2.31	400	2.30	200	1.37	235	2.12	380	2.72	125	2.18
2 p.m. to 5 p.m.	230	2.61	240	2.07	128	2.20	165	2.56	175	0.65	170	3.61	440	0.17	160	3.75	305	3.05
5 p.m. to 8 p.m.	129	1.34	305	2.24	161	5.21	250	2.54	135	5.03	180	1.72	250	3.55	180	2.88	122	2.27
Total	2,422	18.88	1,910	15.04	1,654	20.36	2,025	16.88	2,220	22.68	1,450	10.86	2,030	24.27	1,870	20.74	1,647	18.90
Total night		10.43		6.46		8.72		8.26		8.19		2.39		17.85		9.21		9.36
Total day		8.45		9.58		11.64		8.62		14.49		8.47		6.42		11.53		9.54

	Nonprotein Diet												High Protein Diet					
	9/9 to 9/10		9/10 to 9/11		9/11 to 9/12		9/12 to 9/13		9/13 to 9/14		9/14 to 9/15		9/15 to 9/16		9/16 to 9/17		9/17 to 9/18		9/18 to 9/19	
Hours	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.
8 p.m. to 8 a.m.	810	8.19	910	7.32	750	7.56	1,210	20.14	840	6.72	895	5.83	960	3.96	1,010	8.41	900	6.54	800	9.71
8 a.m. to 11 a.m.	50	0.98	240	1.98	205	1.78	100	1.62	150	2.11	75	2.13	95	2.99	100	2.67	205	2.03	300	3.25
11 a.m. to 2 p.m.	178	2.71	280	2.20	125	1.94	130	2.34	130	2.13	130	1.91	120	1.79	280	1.74	150	2.10	215	2.04
2 p.m. to 5 p.m.	250	2.29	240	2.13	450	2.22	450	1.54	130	1.51	160	2.13	230	1.92	300	2.54	350	1.96	310	2.76
5 p.m. to 8 p.m.	190	2.38	140	1.50	280	2.10	245	2.48	190	2.08	120	2.28	190	1.21	100	1.89	130	2.75	120	1.75
Total	1,478	16.55	1,810	15.13	1,810	15.60	2,225	28.12	1,440	14.54	1,370	14.28	1,595	11.84	1,390	17.25	1,735	15.38	1,835	19.51
Total night		8.19		7.32		7.56		20.14		6.72		5.83		3.96		8.31		6.54		9.71
Total day		8.36		7.81		8.04		7.98		7.82		8.45		7.91		8.84		8.84		9.80

in Rosenbloom's[3] paper. According to Miller and Baetjer,[4] 80 per cent. of all patients with myeloma have Bence-Jones protein in the urine. During the last twenty years, numerous cases have been reported of the existence of this protein in other diseases (Table 1). Bence-Jones proteinuria, therefore, is not essentially dependent on one disease, but is a manifestation of disease affecting endogenous metabolism.

On the whole, the most characteristic reactions of Bence-Jones protein are its precipitation from acid urine at temperatures of from 55 to 60 C. (131 to 140 F.), its disappearance at the boiling point with the formation of a clear solution, and its reappearance as the solution cools. When concentrated nitric or hydrochloric acid is added to urine containing Bence-Jones protein, the latter precipitates in a dense white cloud, which goes into solution as the temperature is raised to the boiling point and reappears again as the urine is cooled.

TABLE 3.—EXCRETION OF BENCE-JONES PROTEIN DURING THREE-HOUR INTERVALS IN CASE 2

	General Diet					
	9/18/20 to 9/19/20		9/19/20 to 9/20/20		9/20/20 to 9/21/20	
Hours	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.	Urine, C.c.	Protein, Gm.
8 p.m. to 8 a.m.	1,375	1.02	860	1.33	450	4.9
8 a.m. to 11 a.m.	385	0.25	320	0.70	219	0.47
11 a.m. to 2 p.m.	160	0.15	350	0.77	186	0.46
2 p.m. to 5 p.m.	255	0.32	.....	....	35	0.07
5 p.m. to 8 p.m.	540	0.51	310	0.88	218	0.26
Total	2,515	2.25	1,840	3.68	1,108	6.16
Total night		1.02		1.33		4.9
Total day		1.23		2.35		1.26

in the urine. In June, 1919, he had had an acute attack supposed to be referable to the gallbladder, which was followed by a complaint in some respects suggestive of duodenal ulcer. Pallor of skin and weakness were increasing.

On examination, the patient's blood pressure was found to be normal. The urine contained albumin, but was free from

3. Rosenbloom, J.: A Review of the History of Bence-Jones' Protein and Multiple Myeloma, with Complete Bibliography, Med. & Surg. **1**: 257-277 (May) 1917.

4. Miller, S. R., and Baetjer, W. A.: Bence-Jones Proteinuria, Some Observations on Its Occurrence, with Particular Reference to Nephritis and Hypertension, J. A. M. A. **70**: 137-139 (Jan. 19) 1918.

5. Hopkins, F. G., and Savory, H.: A Study of Bence-Jones Protein, and of Metabolism in Three Cases of Bence-Jones Proteinuria, J. Physiol. **42**: 189-250, 1911.

6. Folin, O., and Denis, W.: Metabolism in Bence-Jones Proteinuria, J. Biol. Chem. **18**: 277-283, 1914.

casts, pus cells or red blood corpuscles. The values for blood urea, total nonprotein nitrogen, and for the phenolsulphonephthalein functional test were normal. Because of the presence of large quantities of albumin in the presence of these normal findings, Bence-Jones proteinuria was suspected in spite of the absence of growths or pains in the bones, and the protein was then found in considerable quantities (Table 2) An additional feature of interest was the absence of a demonstrable pathologic lesion of any of the bones, either by physical examination or by roentgenographic studies. A roentgenogram of the gastro-intestinal tract disclosed nothing abnormal, and an exploratory operation revealed a normal stomach and a normal gallbladder. Specimens from the pancreas and from the liver revealed mild chronic inflammatory changes.

CASE 2 (333896).—Mr. J. E. D., aged 49, who came to the Clinic, Sept. 14, 1920, stated that the mass which had been on the right side of the chest for many years had increased in size during the last six months and that it had become somewhat tender. In June, 1920, during a sudden twist of his body he fractured the tenth rib on the right side in the posterior axillary line. He had had pain for one month in the lower portion of the right chest, a cough, and a dull aching pain across the lumbar and sacral vertebrae.

Fig. 1 (Case 3).—Tumor mass of left thoracic wall, and kyphosis of the dorsal vertebrae.

The outstanding features on physical examination were two tumor masses, one approximately 4 cm. in diameter, attached to the tenth right rib in the anterior axillary line, and one approximately 2.5 cm. in diameter attached to the fourth left rib in the parasternal line. On fluoroscopic examination there was evidence of infiltration of both lungs, which showed many nodular areas of metastasis characteristic of carcinoma. Metastasis was also found in the lumbar and sacral vertebrae. The primary origin of the carcinoma was not discovered. Bence-Jones proteinuria was discovered early in this case (Table 3).

CASE 3 (339622).—Mr. R. L., aged 69, examined in the clinic, Nov. 15, 1920, had been well until two years before, when stiffness of the neck and back had developed following exposure and a wetting. Four months later a nodule was discovered on the left thoracic wall attached to the fifth and sixth ribs; it began to increase in size and became quite painful. The patient complained of extreme pain in the right half of the thorax, and a troublesome loose, productive cough.

Repeated examinations of the lungs were negative. The tumor was attached to the fifth and sixth ribs, and in the left anterior axillary line measured 10 by 7.5 cm. The lower portion of both sides of the thorax bulged, and the dorsal vertebrae were fixed (Figs. 1 and 2). There was a marked tenderness to pressure on the second, third, fourth, fifth and sixth ribs of the right side in the parasternal and anterior axillary lines. The skull and the long bones were not tender to pressure.

A roentgenogram of the bones showed multiple circumscribed areas of destruction, varying in size from 0.2 cm. to 0.5 cm., in the skull, the femurs, tibias and radii, and a fracture of the fifth, sixth, seventh and eighth ribs of the right side (Figs. 2, 3 and 4).

A specimen removed from the tumor mass on the left side of the chest wall was reported to be round-cell sarcoma or myeloma.

In this case and in Case 1, a large amount of albumin in otherwise negative urine, a severe secondary anemia, normal blood pressure, normal kidney function, normal blood urea and normal total nonprotein nitrogen suggested Bence-Jones protein, which was found to constitute the entire albumin content (Table 4).

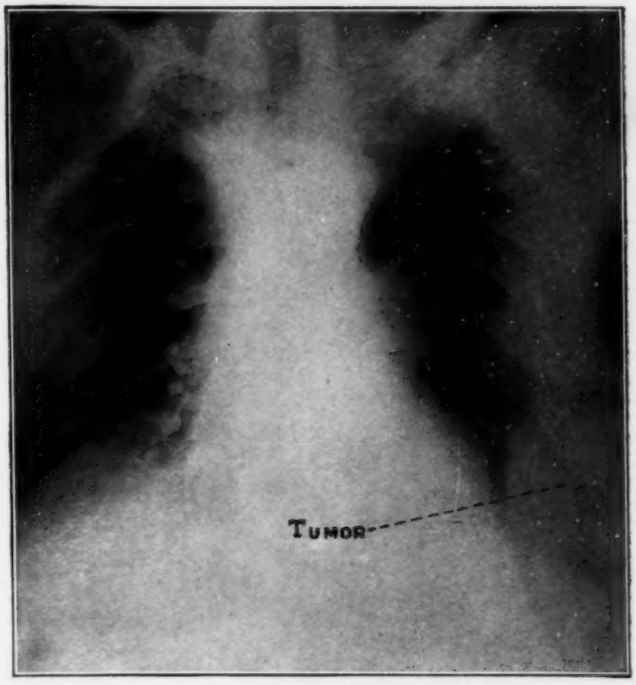

Fig. 2 (Case 3).—Tumor mass of the left thoracic wall.

According to Hamburger's[7] classification, there are three types of multiple myeloma: (1) multiple myeloma

Fig. 3 (Case 3).—Multiple myeloma in bones of the skull. The dark areas are areas of destruction of bone. The increased thickness of the skull, especially in the occipital region, is suggestive of Paget's disease of the bone, but is distinguished from it because the dark areas represent bone destruction, while with Paget's disease there are areas of bone production or eburnation.

mistaken for osteomalacia (Kahler's case); (2) visible tumors with pathologic fractures, and (3) multiple

7. Hamburger, L. P.: Two Examples of Bence-Jones' Albumosuria Associated with Multiple Myeloma, a Preliminary Report, Bull. Johns Hopkins Hosp. 12: 38-45, 1901.

myelomas with vague or absent bone symptoms, diagnosis being made at necropsy. Case 1 probably belongs to the latter group and in many respects is similar to the case reported by Ellinger,[8] whose patient too had symptoms of gallbladder disease with jaundice, chills and fever for six weeks, a marked progressive secondary anemia, a Bence-Jones proteinuria, and no symptoms referable to the bones.

Fig. 4 (Case 3).—Multiple myeloma in the radius and ulna. The dark, blotchy areas show destruction of bone.

The urine in Case 1, after standing for three days under toluene, became darker and deposited a large amount of white material at the bottom of the container. When shaken, the urine exhibited a sheen resembling that of castile soap and revealed under the microscope the typical crystals of Bence-Jones protein (Fig. 5). These crystals had precipitated spontaneously at room temperature. The only other instance of spontaneous precipitation is recorded by Rosenbloom. Magnus-Levy, Grutternick and de Graaf[9] succeeded in precipitating Bence-Jones protein in crystalline form. Dr. D. W. Wilson of Johns Hopkins Medical School, working on this case with us, succeeded in isolating the protein from the blood plasma.

Blood examinations in our cases and in those of Anders and Boston[10] showed a marked secondary anemia (Table 5).

EXPERIMENTAL STUDY

Effect of Diet on Output of Bence-Jones Protein.—The problem was to ascertain the effect of food, particularly of protein intake, on the quantitative output of Bence-Jones protein. Accordingly, the patients were placed on various diets and the urine was collected at three-hour intervals during the day and during the twelve-hour period from 8 p. m. to 8 a. m. The amount of protein in each specimen was determined by Folin and Denis' method with modifications. A similar problem was studied by Hopkins and Savory, in 1911, and by Folin and Denis, in 1914. These investigators found that there is no definite or constant relation between total nitrogen and the albumin in the urine, and that the protein content of food bears no direct relation to the elimination of Bence-Jones protein.

In this series the first patient excreted from 10.8 to 22.68 gm. of Bence-Jones protein every twenty-four hours, whether on a general diet, on a low protein diet or on a high protein diet (Table 2). The second patient remained under observation only three days, and since he was somewhat stuporous, collections of urine were not accurate (Table 3). In both cases, however, the amount excreted during the day was in most instances somewhat in excess of that excreted during the night; on some days the reverse was true. The amounts excreted during three-hour periods remained practically constant. The specimens of urine from the third patient were collected during the day and night (Table 4). Estimations of the total urinary nitrogen as well as of the quantity of Bence-Jones protein were made by means of the micro method of Folin. There was little constant variation in the amount of Bence-Jones protein excreted by the three patients irrespective of protein intake; and there is not a constant relation between the quantity of Bence-Jones protein and the total nitrogen excreted.

TABLE 4.—EXCRETION OF BENCE-JONES PROTEIN DURING TWELVE-HOUR INTERVALS IN CASE 3

		Total Nitrogen, Gm.	Protein, Gm.	Diet
11/ 9/20	8 a.m. to 8 p.m.	2.4	5.4	Milk
	8 p.m. to 8 a.m.	6.3	8.45	
11/10/20	8 a.m. to 8 p.m.	5.0	7.8	Milk
	8 p.m. to 8 a.m.	2.0	4.79	
11/11/20	8 a.m. to 8 p.m.	3.3	7.4	Milk
	8 p.m. to 8 a.m.	4.4	7.3	
11/12/20	8 a.m. to 8 p.m.	3.0	6.9	General
	8 p.m. to 8 a.m.	3.8	9.44	
11/13/20	8 a.m. to 8 p.m.	—	—	—
	8 p.m. to 8 a.m.	—	—	—
11/14/20	8 a.m. to 8 p.m.	1.7	10.5	Mosenthal
	8 p.m. to 8 a.m.	1.5	3.87	
11/15/20	8 a.m. to 8 p.m.	3.8	9.3	General
	8 p.m. to 8 a.m.	2.2	5.7	
11/16/20	8 a.m. to 8 p.m.	2.0	9.1	General
	8 p.m. to 8 a.m.	2.0	5.76	
11/17/20	8 a.m. to 8 p.m.	2.4	2.4	General
	8 p.m. to 8 a.m.	4.4	8.25	
11/18/20	8 a.m. to 8 p.m.	—	—	General
	8 p.m. to 8 a.m.	3.7	6.67	
11/19/20	8 a.m. to 8 p.m.	3.9	7.0	Starvation
	8 p.m. to 8 a.m.	2.7	5.07	
11/20/20	8 a.m. to 8 p.m.	—	—	—
	8 p.m. to 8 a.m.	—	—	
11/21/20	8 a.m. to 8 p.m.	2.7	5.73	General
	8 p.m. to 8 a.m.	3.2	7.07	
11/22/20	8 a.m. to 8 p.m.	6.3	18.5	General
	8 p.m. to 8 a.m.	3.0	2.34	
11/23/20	8 a.m. to 8 p.m.	4.7	6.04	General
	8 p.m. to 8 a.m.	5.2	6.04	

Effect of Intravenous Injection of Bence-Jones Protein.—In order to determine the effect of an intravenous injection of the protein, 1.6 gm. of Bence-Jones protein in 20 c.c. of physiologic sodium chlorid solution was injected intravenously at 8:25 p. m., Nov. 22, 1920. The patient began to chill at 9:15, and continued to do so until 11 p. m. The twelve-hour specimen of urine from 8 p. m. to 8 a. m. contained 2.34 gm. of Bence-Jones protein, with a total nitrogen of 3.01 gm. Twelve hours later the quantity of Bence-Jones protein increased to 18.5 gm., with a total nitrogen of 6.26 gm. These values were the highest obtained at any time from this patient.

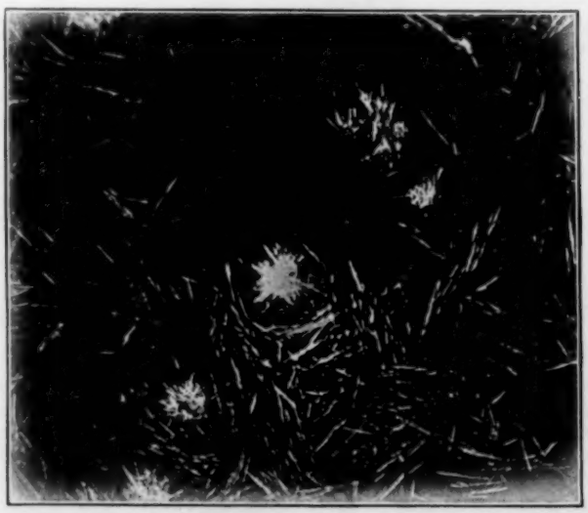

Fig. 5 (Case 1).—Bence-Jones crystals, which precipitated spontaneously from urine at room temperature.

8. Ellinger, A.: Das Vorkommen des Bence-Jones'schen Körpers im Harn bei Tumoren des Knochenmarks und seine diagnostische Bedeutung, Deutsch. Arch. f. klin. Med. **62**: 255-278, 1898-1899.
9. Quoted by Rosenbloom (Footnote 3).
10. Anders, J. M., and Boston, L. N.: Bence-Jones Albumosuria, with Report of Three Cases, Lancet **1**: 93-97, 1903.

Studies of Saliva, Bronchial Secretions and Cerebrospinal Fluid.—Nov. 18, 1920, saliva and bronchial secretion in Case 2 were examined for Bence-Jones protein, since the patient had had a productive cough for many days. A few drops of acetic acid (2 per cent.) were added to the saliva; mucin was precipitated and filtered out. The filtrate was heated, and a white precipitate (turbidity) appeared which did not change when the solution reached the boiling point. A precipitate was not obtained when saturated ammonium sulphate was added to the saliva. Bence-Jones protein was therefore absent.

Fig. 6 (Case 1).—Bence-Jones crystals, which precipitated spontaneously from urine at room temperature.

A few drops of nitric acid (concentrated) were added to material coughed up by the patient; the white precipitate was filtered off. The filtrate heated to the boiling point gave a clear solution which, when cooled, become quite turbid, and

TABLE 5.—BLOOD ANALYSIS IN THREE CASES OF BENCE-JONES PROTEINURIA

	Case 1						Case 2	Case 3
	7/21/20	7/29/20	8/4/20	9/1/20	9/10/20	9/17/20	9/19/20	9/9/20
Hemoglobin	42.0	40.0	45.0	44.0	40.0	40.0	50.0	61.0
Erythrocytes (millions)	2.5	2.84	2.49	3.01	2.35	2.7	3.56	3.97
Leukocytes	3,200	3,600	2,800	5,800	3,400	5,000	5,600	11,400
Color index	0.9	0.7	.....	.....	.....	1.7+	0.7+	0.7+
Cells counted	200	200	200	200	200	200	200	500
Polymorphonuclear neutrophils	43.0	48.0	40.5	64.5	62.5	41.0	68.0	73.0
S. lymphocytes	2.5	46.0	57.0	32.0	31.0	51.0	15.0	16.0
L. lymphocytes	0.5	5.5	2.5	2.5	6.0	2.5	5.0	4.8
Eosinophils	1.0	0.5	....	....	....	2.0	1.5	1.0
Basophils	....	....	....	1.0	0.5	2.5		
Anisocytosis	Slight	Moderate	Slight	....	....	Moderate		Slight
Poikilocytosis	Slight	Slight	Slight	....	....	Moderate		Slight
						Monocytes 10.5		

cleared again when it was boiled. This was positive evidence of Bence-Jones protein in the bronchial secretion. The spinal fluid was examined for Bence-Jones protein, but none was found.

CONCLUSIONS

1. A large quantity of albumin in otherwise negative urine in a patient with normal renal function and normal blood pressure and a marked secondary anemia should suggest the possibility of Bence-Jones proteinuria, especially when bone lesions are present.

2. Bence-Jones proteinuria is significant from a diagnostic and from a prognostic standpoint of multiple myeloma, since it occurs in 80 per cent. of all cases, and usually is followed by death within two years.

3. The quantity of Bence-Jones protein excreted is independent of the protein intake, evidenced by an approximately constant excretion for three-hour periods, irrespective of changes in diet.

4. The amount of Bence-Jones protein excreted during the night when food is not taken is only slightly less than the amount excreted during the day.

5. There is not a constant relationship between the quantity of Bence-Jones protein and the total urinary nitrogen excreted.

6. As the finding of Bence-Jones protein in the urine led to its detection in the blood, it may be possible that other proteins of a similar or dissimilar nature are in existence in the blood and are not excreted by the kidneys.

STEREOSCOPIC ROENTGENOGRAPHY

THE VISUALIZATION OF SURFACES FOR THE BETTER LOCALIZATION OF UNDERLYING FOREIGN BODIES

H. D'ARCY POWER, M.D.
SAN FRANCISCO

The use of stereoscopic roentgenography has become a commonplace and, but for the difficulty of examining the plates, would be in still greater use. I would point out that for most purposes the use of large plates and the reflecting stereoscope is entirely unnecessary. Most conditions requiring examination in this way can be included within the dimensions of a 3 by 4 plate, and two such plates taken under a tube, with a difference of 2½ inches from their centers, could be examined in an ordinary stereoscope, whereof the accompanying illustrations are sufficient proof. In most cases in which this is done, the area to be examined stereoscopically would be determined first by the fluoroscope, or a single exposure on a large plate. Working in this way, any one possessing an ordinary roentgenographic outfit is in a position to make perfect roentgenostereograms.

In connection with these general remarks on roentgenographic stereograms, I should like to comment on

a b c a b c

Fig. 1.—Roentgenostereogram with paraffin lead coating: *a*, skin uncoated; *b*, skin coated far side of bone; *c*, skin coated near side of bone.

the fact that an alternation in the position of the two plates alters the apparent point of view of the object examined, so that under one condition it appears to be viewed from the front, and in the other from behind; in my opinion, however, such an effect is in one case purely pseudostereoscopic, and does not form a scientific basis for interpretation. The unreliability of pseudostereoscopic effects is well known, and when

a part requires an examination from two opposite positions, separate plates should be made for each.

The localization of foreign bodies by stereoscopic roentgenograms has been in much use with somewhat unreliable results. In the roentgenogram we are dealing solely with shadows, and the correct relation of these, even with the aid of the stereoscope, is dependent on our ability to form standards of comparison, which in the average case is that of the nearest bone. As between bone and bone, this is often sufficient; but as between bone and adjacent soft surfaces, such criteria are usually lacking. Many means of forming judgments as to the position of foreign bodies embedded have been suggested, most of them being difficult to apply, and not always successful—among these, the placing of objects on the skin surface which, however, I am told by those who have used it, is far from perfect. Finally, Béclère[1] suggested that the whole skin surface might be made visible by inunction with petrolatum and salts of bismuth. This appealed to me and to Dr. Ferdinand Freytag (whose assistance I desire to acknowledge), but, we did not find the use of petrolatum and bismuth at all satisfactory; the material was irregular in its distribution, and the effect confusing. The results of using salts of barium were still worse; nor does lead, although more opaque to the roentgen ray, lend itself kindly unless properly prepared. Experience in painting had taught me that what is known as Flake White No. 2 in oil colors is capable of extremely fine division and even superimposition, and a little experimentation proved that this was a perfect medium for rendering visible even the finest details of the skin.

The only objection that I found in its use was the somewhat troublesome washing necessary to remove it. With the view of finding a substitute that could be immediately detached, I experimented with coatings made by melting together the flake white in the proportion of 20 to 100 parts of paraffin. Such a mixture

Fig. 2.—Roentgenostereogram showing direction and position of nail with reference to skin and patella.

melts and can be coated on the surface without burning, and afterward removed as a solid shell. It does not render the fineness of detail given by the simple paint, but can be used without difficulty over small areas and, so far as I can see, affords the same frontal point of view for the comparison of distance. The accompanying photographs show the difference in appearance between the two methods.

The surface to be coated should have the flake white carefully rubbed in and maintained at a smooth and even thickness. It should be thick enough not only to fill the markings on the skin surface, but also to coat the intervening ridges of skin. A little experience will teach the proper depth When

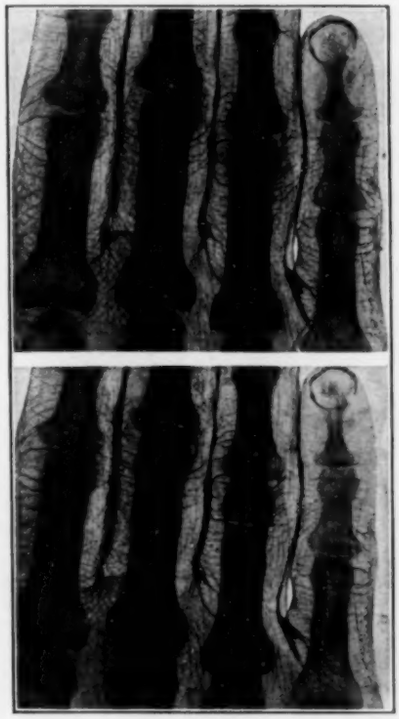

Fig. 3.—Lead coating (flake white in oil No. 2) on both sides of hand.

the roentgenogram is taken, a piece of paper should be placed beneath the coated surface, so that the paint will not smudge the casette. In areas in which there is a double skin surface, I am of opinion that the best way is to coat only the surface that is toward the light, as the appearance of the distant skin may confuse rather than help. Examples of these methods are given in Figure 1.

Besides giving a better basis of judgment for the position of foreign bodies, this procedure has a field in determining the direction of anal and other fistulas, and in the visualization of the eyelid for the better localization of small foreign bodies in the eye. Doubtless other uses will occur.

1. Béclère, H.: Bull. Soc. franç. de photog. 7, May, 1920.

Progress of Child Welfare.—How far the states have officially recognized the importance of child welfare work is brought out in the annual report of the Children's Bureau of the United States Department of Labor. At the present time thirty-five states have child hygiene or child welfare divisions, while only eight states had such divisions before an organized effort for their establishment was carried on as part of the children's year campaign. New Jersey, which has appropriated $150,000 a year for its child hygiene division, has so far adopted the largest budget of any state for this special work. However, some bureaus with only meager appropriations, through the cooperation of medical, public health and social welfare organizations have been able to carry out far-reaching plans of health work. The Federal Children's Bureau acts in an advisory capacity to the state organizations and renders direct assistance in the development and administration of the work. To assist private organizations engaged in child welfare work, the bureau publishes bulletins on office administration, records, publicity and other problems.

A COLOSTOMY OPERATION

WATERS F. BURROWS, M.D.
AND
ELLIOTT C. BURROWS, M.D.
NEW YORK

The reluctance with which a colostomy operation is consented to often leads to unnecessary suffering. If a better functioning outlet for the bowel were supplied, there would be more satisfaction for both patient and surgeon. We have used the operation we describe for a number of years and find that the bowels can be controlled to move once daily. The effectiveness of the method depends on the muscular and pressure constriction of the new formed canal as it passes through the rectus muscle and subcutaneously for a considerable distance, whereby minor waves of peristalsis in the colon are resisted, and expulsion of its contents in small amounts and at frequent intervals is prevented. An additional advantage of the operation is that when performed for nonmalignant disease of the rectum or

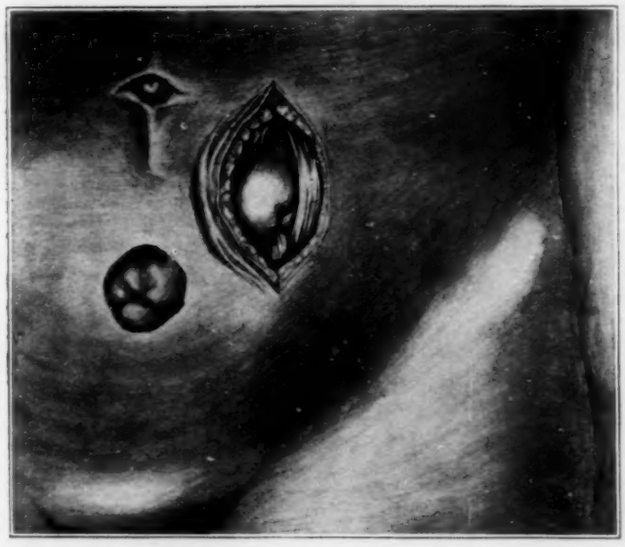

Fig. 1.—Abdominal incision through left rectus; sigmoid brought through subcutaneous channel to colostomy opening.

as a preliminary to resection, it is possible at a later date easily to reestablish the continuity of the bowel by a side-to-side anastomosis of the two parallel segments of sigmoid passing to the abdominal wall. The colostomy opening is then closed without extensive dissection, and as the abdominal portion of the operation of closure is performed well away from the infectious colostomy area, danger of infection is lessened.

The colostomy operation incision is made through the skin, subcutaneous tissue and anterior rectus sheath near the outer border of the left rectus muscle. It passes between the parallel fibers of the rectus muscle at about its outer third. The incision is 3 inches long, with its upper extremity at the navel level. A subcutaneous channel is then made on the anterior rectus sheath, extending from the primary incision downward and inward, to about midway between the pubis and umbilicus, where a vertical skin incision 1½ inches long opens into it.

Through the abdominal incision the sigmoid is sought, and its proximal and distal segments are distinguished. It is brought through the rectus muscle with the proximal segment less redundant than the distal. Both segments of sigmoid are brought through the rectus muscle and through the subcutaneous channel. The peritoneal and muscle tissues are sutured above and below the exit of the bowel, and the latter is fastened with two silk sutures to the anterior sheath of the rectus. The skin incision is closed. The two

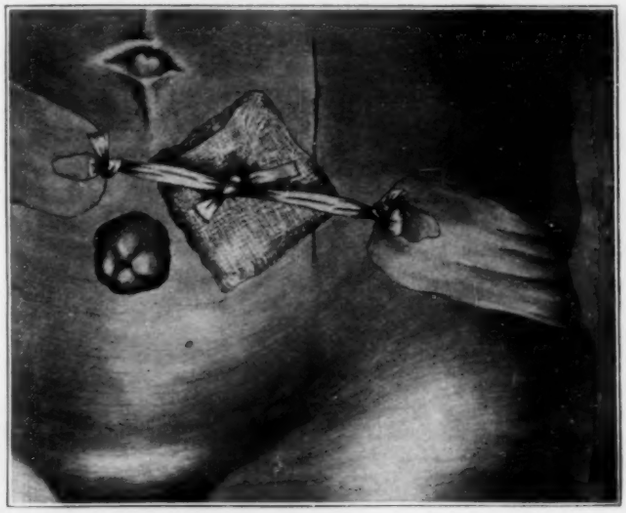

Fig. 2.—Gauze pad to control bowel contents for a period of two weeks.

segments of the sigmoid then protrude at the small midline cutaneous incision. The bowel is left closed for twenty-four hours; or, if opened at once, a rectal tube is sutured into the proximal segment.

For two weeks the bowel contents are controlled by means of a pad as shown in Figure 2 and evacuated by

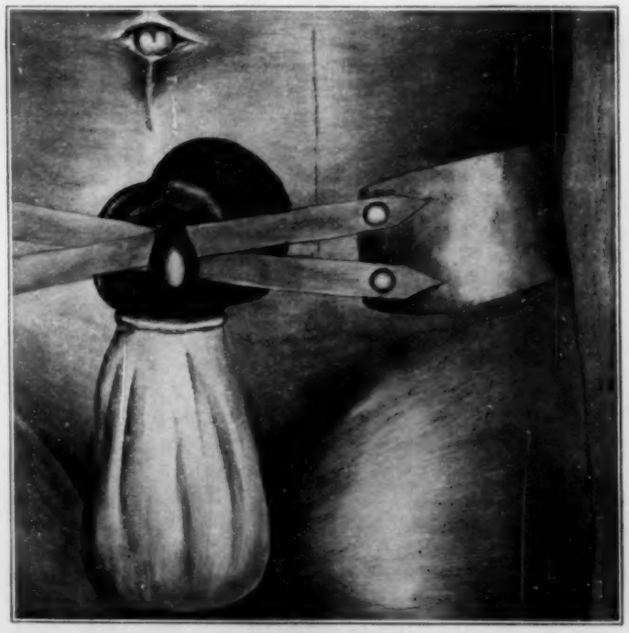

Fig. 3.—Special pressure apparatus with detachable rubber bag fitted over colostomy.

a daily injection of a small amount of water. Thereafter, a special pressure apparatus is fitted, as shown in Figure 3, with an opening over the colostomy and a small detachable rubber bag supplied for any possible

contents escaping during the day. The belt part of the apparatus, passing around the pelvis, is tightened as required, and the pressure is thereby exerted on the subcutaneous portion of the bowel.

17 East Thirty-Eighth Street.

GRANULOMA INGUINALE *

MEREDITH F. CAMPBELL, M.S., M.D.
NEW YORK

Less than a year ago, Dr. Douglas Symmers [1] described two cases of granuloma inguinale that occurred in American negroes who had never been outside the United States, demonstrating in the ulcerative lesions of both patients the intracellular inclusions which are held to be characteristic of this disease. Although Grindon,[2] in 1913, called attention to three cases in St. Louis, the diagnosis was based on clinical grounds, so that the investigations of Dr. Symmers are the first actually to establish the fact that the disease is not peculiar to the tropics but is endemic among negroes in this country. Since the appearance of his paper, I have had an opportunity to study three additional cases occurring in the Urological Service of Bellevue Hospital, and another case has been observed by Dr. Jessup at the New York Skin and Cancer Hospital. Moreover, I have been informed of the occurrence of apparently identical cases in Texas, Mississippi and New Jersey. It would seem, therefore, that the disease is not uncommon in this country. This assumption is significant in view of the fact that the condition, while incapacitating, is not only easily recognized, but is susceptible of cure.

Fig. 1 (Case 2).—Extensive involvement of penis and thigh.

Clinically, granuloma inguinale—known also as serpiginous ulceration of the genitals, groin ulceration, granuloma venereum, etc.—begins as a small, moist papule which soon ulcerates. Progressively and eccentrically the surrounding tissue is invaded and destroyed. The lesions are vivid in hue and appear as ulcerated masses of granulation tissue. The terminal picture is that of a dense contracting scar "surrounded by a serpiginous irregular border of nodular, somewhat raised, red, glazed, delicately skinned or pinkish superficially ulcerating or cracked new growth" (Manson). Coincident adenopathy is rare. The lesion is painless unless pressed on, it bleeds easily, and at times it may be the seat of an intense itching or burning sensation. Usually the wounds emit an offensive odor, asserted by some observers to be pathognomonic.

Although the disease is most frequent in women, attacking especially the vulva and adjoining tissues, it is not uncommon to find involvement of the male genitalia, perineum and the anal, inguinal and suprapubic regions, as well as the inner surfaces of the thighs. Furthermore, lesions have been found on the lips and cheek and in the mouth. The process spreads both by autoinoculation and peripheral extension, showing no tendency to spontaneous healing.

As a clinical entity, granuloma inguinale was first described by Conyers and Daniels [3] in 1896, when nine cases were reported. Since then more than fifty have been recorded by various observers in different parts of the world. It is found chiefly in the tropics, particularly India, southern China, East and West Indies, the Fiji, Solomon and New Hebrides Islands, Tripoli, along the western coast of Africa, and on the eastern coast of South America from the Guianas to Argentina. Sporadic cases have been reported in Australia and London. It is to be noted, also, that nearly all of the described cases have been in negroes. Croker,[4] however, has seen the condition in a white male.

The etiology of granuloma inguinale is not a definitely settled question. By some (Maitland,[5] Wise [6]) who record having seen *Spirochaeta pallida* in the lesions, the process is regarded as syphilitic. Others (Conyers and Daniels [3]) believe it to be tuberculous. *Spirochaeta refringens* has been demonstrated in lesions by MacLennon.[7] Donovan,[8] in 1905, described certain inclusions in the mononuclear cells found in the sores. Since that time most observers [9] have agreed on the constancy with which this micro-organism is to be demonstrated in the lesions, and the tendency seems to be to accord it an important rôle in the production of the disease.

Morphologically, these inclusions of Donovan are encapsulated, gram-negative, coccoid, and diplococcobacillus forms. Some investigators have been able to obtain the organisms in pure culture. Numerous attempts to obtain pure cultures in our cases were fruitless.

The derivation of this particular organism is uncertain. Donovan [8] believed the germ to be a protozoan; Flu,[9] a chlamydozoa; Siebert,[9] an encapsulated diplococcus; Aragão and Vianna,[10] a separate genus of schizomycetes. In the hands of Walker,[11] it confirmed

* From the Urological Service, Bellevue Hospital.

1. Symmers, Douglas, and Frost, A. D.: J. A. M. A. **74**: 1304 (May 8) 1920.
2. Grindon: J. Cutan. Dis. **31**: 236, 1913.
3. Conyers, J. H., and Daniels, C. W.: Brit. Guiana Med. An. **8**: 13, 1896.
4. Croker: Diseases of the Skin, Ed. 3, p. 1096.
5. Maitland: Brit. M. J. **1**: 1463, 1906.
6. Wise, K. S.: Brit. M. J. **1**: 1274, 1906.
7. MacLennon, A.: Brit. M. J. **2**: 995, 1906.
8. Donovan: Indian M. Gaz. **40**: 414, 1905.
9. Siebert, W.: Arch. f. Schiffs- u. Tropen-Hyg. **2**: 379, 1907. Martini, E.: Ibid. **17**: 160, 1913. Flu, P. C.: Ibid. **9**: 87, 1911.
10. Aragão, H., and Vianna, G.: Mem. do Inst. Oswaldo Cruz **2**: 211, 1913.
11. Walker, E. L.: J. M. Res. **37**: 427 (Jan.) 1918.

to the group of encapsulated bacilli of which the *Bacillus mucosus-capsulatus* of Friedländer is, perhaps, the best known. This encapsulated form was demonstrated in four of the five cases at Bellevue. Walker's observations are particularly interesting in view of the occurrence of apparently related bodies in rhinoscleroma.

Fig. 2 (Case 3).—Nearly healed inguinal wound, with small healing lesion of prepuce.

Usually the patient gives a history of previous trauma, such as circumcision, or of infection, most frequently bubo, the ulceration occurring either after the infection has cleared up or dating its progress from the time of the primary infection, ordinary treatment being inadequate. This at once raises the question as to whether the organism found may not be a secondary invader, engrafting itself on devitalized tissue and giving rise to the granulomatous process. Repeated attempts to produce the disease by inoculation into human tissue have been unsuccessful.[11]

Microscopically, the picture is not unlike that of any other simple granulomatous process. There is marked round-cell infiltration accompanied by great numbers of plasma cells and eosinophils. Vascularity, as a rule, is not marked. The epithelial papillae show extensive prolongations in some fields; in others, atrophy is present. The superficial epithelial layers in still other places are necrotic or missing. Absence of giant cells and caseation is to be noted. The cells containing the inclusions are oftenest large and mononuclear. We were not able to identify the cell inclusions in tissue sections.

Formerly, when the nature of the disease was unrecognized, cauterization, arsphenamin, neo-arsphenamin and other antisyphilitic therapy, vaccines, surgical extirpation and the roentgen ray were employed with uniformly unsuccessful results. We now believe that in tartar emetic (antimony and potassium tartrate[12]) we have a specific drug for this condition. This belief is founded on the successful treatment of more than fifty cases in various parts of the world.

12. To prepare the solution, 5 gm. of antimony and potassium tartrate is dissolved in 500 c.c. of distilled water. The solution is then passed through a Berkefeld filter until, on culture, it is sterile. Five tenths c.c. of hydrochloric acid is added to prevent precipitation.

In different hands the dosage varies, but nearly all have used a 1 per cent. solution, which may be given intravenously in amounts as high as 20 c.c. without reaction. Our practice at Bellevue Hospital has been to begin with about 2 c.c. of the tartar emetic solution diluted with 8 c.c. of sterile distilled water. The injections are given intravenously three times a week, 1 c.c. more of the antimony solution and 1 c.c. less of the water being used at each treatment until the full strength (1 per cent.) is given. With the 1 per cent. solution we have not given more than 12 c.c., although others have used as much as 20 c.c. at a time. We have noted that when given on successive days, a moderate reaction occurs the second day.

At present we can record but one cure. A course of treatment covers from six to eight weeks. In Cases 2 and 4 the patients left against our wishes, remaining in the hospital only three and two weeks, respectively, after treatment was begun. It is advised by Aragão and Vianna[10] that about twelve injections be given after cure is apparently complete, to insure against recurrence. They have not seen a recurrence in those cases which have had such a course.

REPORT OF CASES

CASE 1 (reported by Dr. Symmers[1]).—The intracellular inclusions were found.

CASE 2 (reported by Dr. Symmers[1] at time of previous admission).—The intracellular inclusions were also found in the secretions from the ulcers in this patient. The man, colored, a native of Georgia, but residing in Pennsylvania at the onset of his disease, returned to Bellevue, June 10, 1920, after having left against advice in February, 1920. Briefly, his present history began in February, 1916, with the appearance of a papule on the penis three weeks after exposure. No secondary symptoms followed. The papule broke down, and granulomatous ulceration of the penis resulted. Two months later a similar papule appeared on the anterior surface of the right thigh, ulceration followed, and a rather moist granulomatous lesion, extending across the thigh, resulted. After vigorous antisyphilitic therapy, the inguinal lesion was almost healed when the patient left against advice. Soon, however, the ulcer reappeared, identical with the previous manifestation.

Fig. 3 (Case 4).—Marked involvement of groin, with extensive edema of penis.

He was admitted, Jan. 13, 1920, at which time the wound was curetted and, after intensive antisyphilitic treatment, was nearly healed a month and a half later. The ulcerated area about the penis was also improved. This improvement was temporary, however, for at the time of readmission, in June, lesions were present on the thigh and penis, appearing much the same as five months previously. A rather vigorous course of roentgenotherapy was carried out for two weeks, but no improvement resulted. The patient was then given 44 c.c. of 1 per cent. tartar emetic solution intravenously over a period of three weeks. Induration disappeared, a fine pinkish epithelial layer grew out, and

the wounds were healing rapidly when the patient again left against advice and has not reported again.

At no time was the Wassermann test positive to either alcoholic or cholesterinized antigens.

Case 3.—A negro man, aged 28, a resident of Macon, Ga., where he has lived since birth, was first admitted to Bellevue Hospital, Jan. 3, 1920. For the last four months he had been bothered by a score on the glans penis near the frenum. The lesion began as a papule, ulcerating two months later. Because of considerable paraphimosis, a dorsal slit was made. About the same time an area of ulceration following a similar papule appeared in the left groin. The Wassermann reaction was + at this time. An intensive course of arsphenamin and mercury brought about no improvement in the local condition. February 3 (one month after admission), the inguinal granulations were curetted and cauterized without improvement. He then left against advice.

Five months later, August 15, he returned with an ulcerating granulomatous lesion on the frenum, in the wound of the dorsal slit, and in the left groin, the clinical picture being that of granuloma inguinale. The groin lesion, which was 3 inches in length and nearly an inch in width, followed the course of Poupart's ligament to the pubis. Adenopathy was absent. A small, rather dry incrustation covered the lesion. We were unable to demonstrate the organisms in smears, this being the only case in which we were unsuccessful. The serpiginous margins were markedly indurated. Examination of tissue removed from the edge of one of the lesions disclosed a granulomatous growth with rather marked infiltration of eosinophils.

The patient has now had a total of 95 c.c. of 1 per cent. tartar emetic solution intravenously over a period of seven weeks. At the present time all wounds are entirely healed save for the presence of a small scaly incrustation at the site of the biopsy. To date this is the only case that we can report as cured.

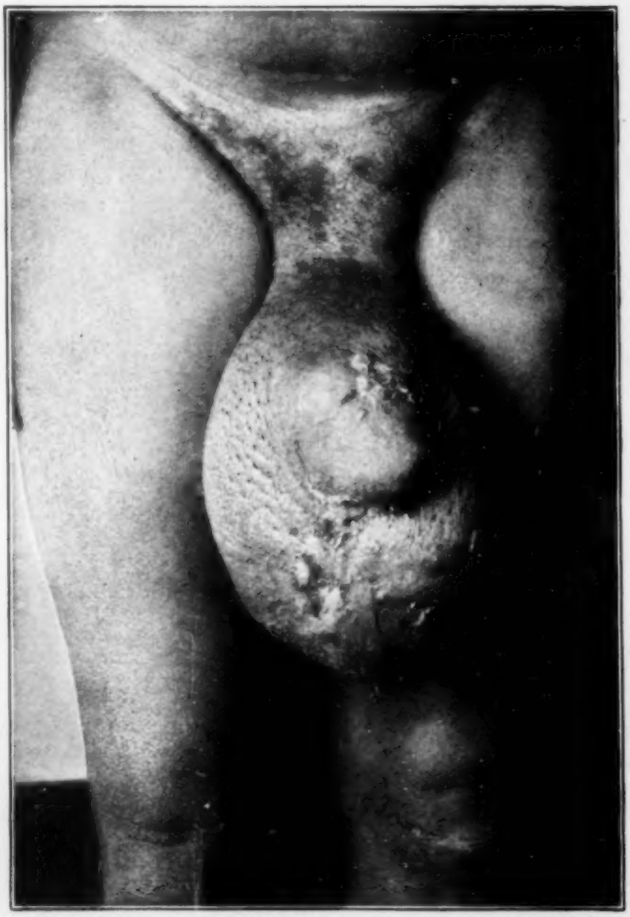

Fig. 4 (Case 5).—Elephantiasis type of granuloma inguinale, showing obliteration of penis. This is one of the rarest of all known varieties.

Case 4.—A negro man, aged 27, who was a native of Savannah, Ga., and had never been outside the United States, was admitted to Bellevue Hospital, Sept. 5, 1920, complaining of an ulcerating wound on the lower abdominal wall. Chancre was denied. Eight years before he was circumcised, suffered postoperative priapism, and in the course of an erection the sutures pulled out. The glans penis was then amputated. Seven months before admission he had a spontaneous bubo which was incised and promptly healed.

The onset of the present condition was gradual and occurred three months previous to admission with a small papule on the side of the shaft of the penis. This papule ulcerated and gradually formed an indolent sore the size of a quarter. Three weeks later he noticed a similar papule just above the pubis on the right side. The papule ulcerated and spread slowly until the lesion reached from the right anterosuperior spine to a point 2 inches to the left of the median line and downward between the scrotum and thigh on the right side, extending nearly to the anus. On admission, this area was covered by a rather thick cream colored exudate and was swarming with maggots. The edges were moderately indurated and serpiginous; the surface was made up of shining, bright red vegetating granulations which bled easily and were sensitive to pressure. The Wassermann reaction was negative to both antigens. The intracellular organisms described by Donovan were found.

The patient was then given a total of 42 c.c. of 1 per cent. tartar emetic solution over a period of two weeks. In this time the wound became quite dry and less indurated, and there was new epithelial growth and active wound repair. He then left against advice and has not returned for further treatment.

Tissue specimens showed only a granulomatous growth with a necrotic epithelial layer and rather marked infiltration of polymorphonuclear leukocytes.

Case 5.—A negro man, aged 32, admitted, Sept. 23, 1920, presented a large scrotum with numerous granulomatous lesions about the penis and over the anterior scrotal surface. The patient was a native of Savannah, Ga., and was living there at the time of the onset. He had, however, traveled on coastwise steamers through the tropics, but had not been in the tropics for some time previous to the onset of the disease. Chancre was denied. One year previously he had gonorrhea and a small bubo. The bubo was incised and healed rapidly.

One month previous to admission he noticed a small papule on the dorsal prepuce. One week later this was found to have ulcerated, and the lesion was spreading down over the anterior surface of the scrotum. Ten days after onset the scrotum began to swell, gradually attaining a length of 8 inches and a breadth of 6 inches. The penis became markedly edematous, and as an organ was nearly obliterated. The lesions were rather shiny, brilliant red, granulomatous nodules with serpiginous borders. In the deeper portions, ulceration was present and was accompanied by purulent exudate. Itching and burning were complained of at times, but no pain was present unless the sores were pressed on. It is interesting to note that this is the type of granuloma described by Daniels[13] as constituting the so-called elephantiasis-like variety, and is exceedingly rare. The characteristic organisms were demonstrated in the lesions. The Wassermann reaction was negative. Examinations for filariae were also negative.

The patient was given 67 c.c. of 1 per cent. tartar emetic intravenously over a period of nearly three weeks. Marked improvement in the condition of the sores was evidenced by diminution in size of the scrotum, drying up of the lesions, disappearance of induration, and formation of new epithelial layers at the wound margins. Discomfort also disappeared.

During the fourth week the scrotum abruptly became markedly edematous and painful. The patient's temperature rose to 106, and the spleen was palpable two finger breadths below the costal margin. The patient presented the picture of general sepsis, the etiology of which for some time was

13. Daniels, in Allbutt and Rolleston's System of Medicine 2: 708, 1912.

unknown. Blood culture was sterile. Six days after this reaction a moderate sized abscess appeared at the lower pole of the scrotum. This was excised under local anesthesia, at which time the edematous tissues within the scrotum were found to be necrotic. A large transverse incision was made and a small amount of free pus evacuated.

It was then decided advisable to make wider incisions and, under ether, the lower half of the scrotum was removed. Lateral incisions, carried up to the base of the penis, opened many pus pockets and permitted the tissues to be laid open. On making lateral slits through an exceedingly hard and indurated prepuce, we found the glans penis 1½ inches from the preputial orifice.

The patient died eight hours later, death being due in all probability to sepsis coupled with operative shock. At the time of death the cutaneous lesions were nearly healed, only a small ulcerating area being present on the dorsal prepuce.

It is, of course, necessary to consider the possibility of the condition's being syphilitic. In Cases 2 and 3 the history or serology are at least suggestive, but antisyphilitic therapy failed to produce any permanent results, whereas in Case 3 the patient was cured by the antimony treatment.

CONCLUSIONS

1. Granuloma inguinale is a clinical entity.
2. It is endemic in the United States, particularly among negroes, and is probably not uncommon.
3. The intracellular inclusions described by Donovan seem to bear a direct etiologic relationship to the disease. They are found with striking constancy. It likewise seems probable that they represent secondary invaders, promoting and perpetuating the process of ulceration.
4. The diagnosis of granuloma inguinale must be considered in all chronic ulcerative lesions of the genital and perigenital tissues, especially in negroes from the subtropical Southern states.
5. The intravenous administration of tartar emetic constitutes a specific treatment.

Bellevue Hospital.

DISSOCIATION OF MICROBIC SPECIES

A PRELIMINARY COMMUNICATION *

PAUL H. DE KRUIF
NEW YORK

The observations reported herewith have been made in the course of virulence studies with the bipolar bacillus of rabbit septicemia (*B. lepisepticum*). The majority of the strains used in these experiments were isolated from pneumonias occurring spontaneously in the normal animal stock of this laboratory. This organism, freshly isolated from the rabbit, grows well on mediums enriched with rabbit blood or serum, but poorly on ordinary mediums. In experiments dealing with the quantitative estimation of virulence, dilutions from six to ten hour rabbit serum broth cultures were carried out, in plain broth, to 10^{-9} c.c. of the original culture. Subcultures of dilutions of 10^{-2} to 10^{-9} were made in parallel series of 5 per cent. serum broth, and of plain broth.

On incubation, all of the cultures in serum broth grew. On the other hand, growth occurred in the plain broth subtubes from 10^{-3} or 10^{-4}, but not from higher dilutions. The character of the growth in the plain broth series is strikingly different to that in the serum broth series. The serum broth subtubes, especially those of the higher dilutions, grow diffusely, with little or no precipitate. The organisms in the plain broth tubes grow in clumps, and rapidly sink to the bottom of the tube.

When care is taken to plate out the two types in serum agar, subcultures from the granular type persist in their granular character, even when returned to serum broth. Those from the diffuse type grow diffusely, both in serum and in plain broth. The Microbe G (granular growth) is morphologically indistinguishable from Microbe D (diffuse growth). The colonies on serum agar of Microbe G are markedly different in appearance to those of Microbe D. This fact makes possible the demonstration that the G and D types preexist in the original culture. In a word, the granular growth character is not the result of a mutation of the organisms of the primitive culture, resulting from transfer to plain broth.

DIFFERENCE IN TYPES

The most striking biologic difference between the two types lies in their virulence for rabbits. Microbe G has failed to kill young rabbits in dose of 10^{-2} c.c. Microbe D from the same parent culture, subjected to an identical number of transplants, on the same medium, killed in dose of 10^{-6} c.c. Rabbits surviving large injections of the low virulent G are resistant to multiple fatal doses of the virulent D.

Both types G and D are agglutinated in relatively high titer by serum from animals immunized with the parent culture (G + D). Serum from rabbits immunized with the pure D culture agglutinates both G and D microbes. On the other hand, serum resulting from G type immunization is much more active against G than against D. These interesting relationships will be discussed fully in the more detailed report to follow.

CONCLUSION

It would seem certain, from the foregoing data, that cultures of the rabbit septicemia bacillus contain individuals of distinctly different character. These individuals can be dissociated by various methods, and once separated, have so far remained true to type. The facts reported have a direct bearing on the question of microbic heredity and of attenuation. The question at once arises as to whether the G and D varieties coexist in the primitive material responsible for the natural infections, or whether the G form appears as a mutant shortly after removal from its natural habitat in the host.

* From the Laboratories of the Rockefeller Institute for Medical Research.

Government of Hospital.—The final governing authority of the hospital should be a board of trustees. No member of the board should be a member of the active or consultant medical staff of the hospital. Hospitals which are under a religious, or public, city, or federal organization and which therefore cannot have trustees, should appoint an advisory committee similarly constituted. In addition to the men members of the board of trustees who represent chiefly financial, administrative and broad public interests and experience, it is of much importance that there be included on the board of trustees a representative of some institution of higher education, viz.: university, normal college, and women members whose experience and interest can be relied upon to contribute constructive ideas and opinions.—M. M. Davis, *Mod. Hosp.* **16**:23, 1921.

Clinical Notes, Suggestions, and New Instruments

AN AUTOGRAPH HISTORY OF A CASE OF ADDISON'S DISEASE

A. L. MUIRHEAD, M.D., OMAHA
Professor of Pharmacology, John A. Creighton Medical College

Up to the age of 19, the writer enjoyed excellent health. At that time he left his home on a Canadian farm and went to school in a nearby city, where a hearty farm appetite, a cheap boarding house and insufficient physical exercise combined to cause an indigestion that has continued, to some extent, up to the present time. This indigestion was in the form of gastric and intestinal fermentation of fats and carbohydrates. It produced a feeling of weariness, drowsiness and depression that often interfered with his studies. This condition continued, in varying degree, for a good many years and at times caused depression, both physical and mental, almost as marked as Addison's disease does at the present time.

While working as assistant in the pharmacologic laboratory of the University of Michigan in 1892, the writer and others observed pus cells in his urine. An investigation to determine the source of this pus was made by several members of the medical faculty without definite result. One young pathologist asserted that he had found tubercle bacilli in the urine, and on the strength of this evidence a diagnosis of tuberculosis of the bladder and probably of one kidney was made, and treatment was instituted. Cystitis developed, probably from local examination and medication. This cystitis improved after going to northwestern Nebraska in 1894, but some irritability has remained up to the present. Since 1892, although the patient has been examined and treated by several eminent physicians, no further evidence of tuberculosis has been discovered. The presence of pus in the urine, however, continued for twenty-six years.

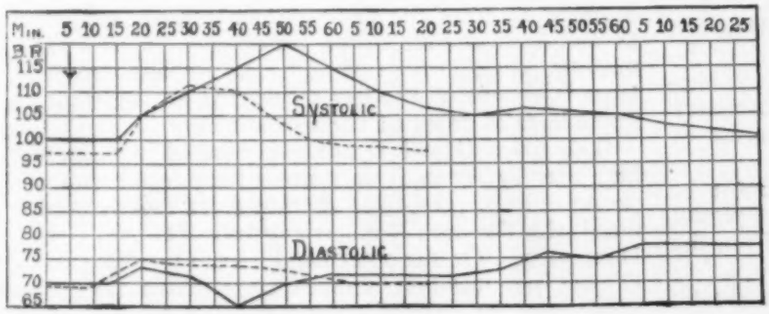

Fig. 1.—Comparison of the effects on the blood pressure of 1/200 grain of epinephrin when administered hypodermically in physiologic salt solution (broken line) and when given in acacia mucilage (solid line). Arrow indicates time at which epinephrin was administered.

During this time his general health was fairly good, except for an occasional attack of malaise, weakness and anorexia, which lasted for two or three days. Fever was only occasionally observed. In 1896, 1903 and 1910, there were prolonged attacks of much greater severity, with initial chill and high temperature, sweating, marked weakness and some uneasiness in the region of the right kidney, but at no time was there sharp pain.

In 1917 and 1918, he lost in weight and failed gradually in health and strength. A roentgen-ray examination revealed a shadow of considerable size in the region of the right kidney and a diagnosis of renal calculus was made. In May, 1918, he consulted Dr. W. F. Braasch of the Mayo Clinic, Rochester, Minn., in regard to a test of the kidney function. The test revealed a practically functionless kidney on the right side while the left appeared normal. The blood pressure taken at this time read 110 mm., systolic; 80 mm., diastolic.

Removal of the affected kidney was advised, and a right nephrectomy was performed by Dr. E. S. Judd. The removed kidney was found to be almost entirely destroyed by suppuration, but no evidence of tuberculosis was observed. A calculus of undetermined composition, about 1 by 3 cm. in size, was found in the pelvis of the removed kidney.

The patient made a rapid initial recovery, but complete restoration of health was delayed. About six weeks after operation, he had quite a severe attack of acute arthritis of the metatarsophalangeal joint of the great toe of the right foot. During the subsequent eighteen months, he had six attacks of this character, of varying severity. All of these except the last affected only the right great toe. The attacks were diagnosed as gout and presented all the symptoms of that disease. Each attack was preceded or accompanied by rather severe gastro-intestinal disturbance. During this time, he regained a fair degree of health and strength but did not regain normal weight.

During the last week in March, 1920, he had a very severe attack of gout, affecting both great toes. He took several quite large doses of cinchophen (phenylcinchoninic acid) following which a very severe general urticaria developed which caused so much distress that he scarcely slept or took food for a week. He finally developed marked prostration with constant nausea, frequent vomiting of strongly acid fluid, frequent intestinal cramps and drowsiness, with very vivid dreams. The urine at the time contained a large amount of acetone and the blood pressure was 90 mm. systolic, 70 mm. diastolic.

Under the care of his physician, Dr. A. Sachs of Omaha, he slowly improved, and in three weeks he was able to be up, but he continued to be very weak. Bronzing of the skin of the hands and face was first noticed at this time and a diagnosis of Addison's disease was made. It may have been present to a slight degree previously, but the writer had neither observed it, nor had it been called to his attention before this time. In addition, the constant weakness and the extreme irritability of the alimentary tract, first observed after this illness, led the writer to believe that the onset of Addison's disease was comparatively sudden.

During the month of May, he took epinephrin solution by mouth, and doses up to 2 c.c. of the 1:1,000 solution produced no apparent effect. About the first of June, Dr. E. M. Houghton, director of the research laboratories of Parke, Davis and Company, sent him a preparation of dried whole suprarenal gland and a similar preparation of whole pituitary gland. He took a 5 grain capsule of each, twice a day, during the month of June, but could observe no beneficial results.

The first of July, he went to Rochester, Minn., where he entered the Mayo Clinic for treatment. The bronzing at this time was more marked than in April. There were areas of bronzing around the waist, along the spine and there was a dark band on the forehead where the hat band pressed. There was a dark line on the mucous membrane of the lower lip and a small spot on the mucous membrane of the hard palate. The hands and face were appreciably darker than in April. The blood pressure was 82 mm., systolic, and 64 mm., diastolic, on the first reading at the clinic. The alimentary canal was extremely irritable and intolerant of many articles of food. Constipation was marked, and a sensation of tension in the bowel was felt. Bowel movements consisted of hard small fecal masses passed with difficulty, and laxatives, with the exception of magnesia, caused severe purgations, distress and prostration. There was very little pain or abdominal tenderness. Blood examination revealed: hemoglobin, 68 per cent., 4,380,000 red cells and 7,600 white cells. Roentgen-ray examination of the chest was negative. Blood uric acid was 6.9 mg. per hundred c.c. and blood urea 44 mg. per hundred c.c. His basal metabolic rate was about —30.

He was referred to the service of Dr. L. G. Rowntree, and after a diagnosis of Addison's disease had been confirmed, he entered the Stanley Hospital for treatment. He was ordered placed on a purin free diet, and in about two weeks the blood uric acid fell to 2.2 mg. per hundred c.c. His digestive system did not tolerate milk or cream; but eggs, butter,

sugar and other foods of high caloric value were fairly well digested and he gained in weight on an average of 1 pound a week during the six weeks of his stay in the hospital. Epinephrin was administered hypodermically and the first injection of the contents of an ampule of a 1:10,000 solution produced quite marked sensations of exhiliration and increased strength. Later injections of an equal amount produced less marked sensations. Injections of one half to 1 ampule, containing 1 c.c. of a 1:10,000 solution, were given twice daily during his stay in the hospital. During this time an attempt was made to use a solution of epinephrin in dilute mucilage of acacia for the purpose of delaying absorption and prolonging the epinephrin action. A comparison of the blood pressure results after the administration of 1/200 grain of epinephrin in sterile salt solution and the same amount in acacia solution, hypodermically, is shown in Chart 1. Epinephrin solution by rectum was tried also, and the sphygmomanometer revealed positive pressure results. Chart 2 shows the amount and duration of increased pressure produced by rectal injection of 2 c.c. of a 1:1,000 solution of epinephrin diluted with physiologic sodium chlorid solution. This method of medication was used twice daily for several months. He also used rectal injections of dried whole suprarenal gland, 10 grains dissolved in physiologic sodium chlorid solution, but the pressure results were less marked and not definitely measurable. Tyramin, an active constituent of ergot, closely related chemically to epinephrin, was tried and the blood pressure results from the hypodermic injection of 40 mg. are shown in Chart 3. Although the pressure rose sharply from tyramin, it did not continue for as long a time as from epinephrin, and there was a total absence of sensory manifestations such as invariably follow all but very small doses of epinephrin, so it is probable that the sensory effects of epinephrin are due to some cause other than a rise in pressure.

Improvement was observed almost from the beginning of hypodermic epinephrin medication. The earliest results were relief of the feeling of tension in the abdomen and an increased food tolerance. Soon an increase in strength and endurance was observed. On the patient's arrival in Rochester, the first of July, he could not walk two blocks without extreme weariness and shortness of breath, but two weeks after beginning hypodermic epinephrin medication he could walk a mile without much fatigue. A little latter it was

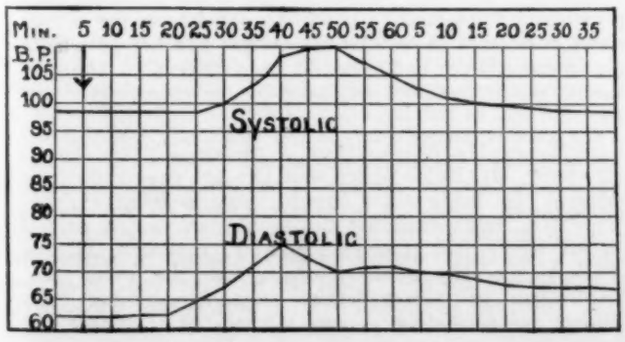

Fig. 2.—Effects on blood pressure of 2 c.c. of epinephrin solution administered by rectum. Arrow indicates time at which epinephrin was administered.

observed by himself and others that the bronzing was perceptibly less, and by the latter part of August, when he returned to his home in Omaha, the "hat band" mark on the forehead had disappeared. The treatment begun in Rochester was continued at home for a month, but rectal medication with epinephrin solution was finally abandoned owing to frequent occurrence of rather severe rectal tenesmus occurring about an hour after the injection. The tenesmus could be prevented by great dilution of the drug, but the larger amount of fluid was found difficult to retain. Ampules of the 1:1,000 solution have been used since returning home, and the epinephrin tolerance has been found to be only 0.2 c.c. Larger doses cause uneasiness, trembling of the extremities, a sense of impending chill and a feeling of tension in the region of the removed kidney. Rectal injection of 10 grains of dried whole suprarenal gland, once a day, has been continued to the preset time, the first of December.

The writer's condition at the present time is as follows:

1. He still adheres to a purin free diet and has had no recurrence of gout or gouty symptoms.

2. The pigmentation has almost entirely disappeared. The casual observer would not see any departure from the natural complexion, though careful search would still reveal a few small areas of pigmentation.

3. The irritability of the alimentary tract has largely disappeared and a varied diet is now well tolerated. Constipation has almost entirely ceased, and he has slowly but steadily gained in weight. His basal metabolic rate, taken quite recently, was about normal.

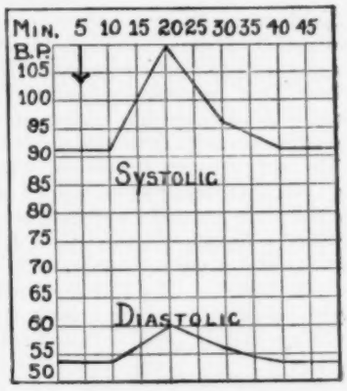

Fig. 3.—Effects on the blood pressure of 40 mg. of tyramin administered hypodermically. Arrow indicates time at which tyramin was administered.

4. His strength and endurance have increased, and he has followed his ordinary occupation of teacher in a medical college without difficulty. He climbs the stairs of the college building quite slowly, but aside from that suffers no disability. Light manual labor around his home is performed without discomfort.

5. The blood pressure level remains about as it was at the onset. The last reading was 92, systolic, and 64, diastolic. The marked improvement observed in spite of low pressure level would indicate a gradual adaptation of the organism to the low pressure level. The artificial supply of epinephrin no doubt aids body function, as a brief withdrawal recently was followed by some recurrence of gastro-intestinal symptoms.

Although the writer is the patient, he believes that observations made by a physician who is also a teacher of pharmacology will be of greater value to those who have patients with Addison's disease under their care than would usual observations.

7717 North Thirty-Ninth Street.

THE EFFECT OF LOCALIZED PNEUMOTHORAX

PRELIMINARY REPORT

NATHAN BARLOW, M.D., AND JAMES C. THOMPSON, M.D.,
NEW HAVEN, CONN.
Surgeons (Reserve), United States Public Health Service

The assignment of duty at U. S. P. H. S. Hospital No. 41 has been such that one of us has made and recorded nearly all of the initial examinations of the chest, and the other has made independent reading of stereoscopic roentgenograms. Discrepancies in the reports were studied in collaboration. The constant occurrence of certain discrepancies which were associated with certain variations in the arrangement of the roentgen-ray markings led to a study of the peculiar condition present, which was found to be identical on a small scale with that which occurs in moderate-sized partial pneumothorax, either spontaneous or produced by attempted artificial pneumothorax. These studies made it evident that small, localized pneumothoraces are very frequent in tuberculosis, that they occur rarely if ever in other pulmonary diseases, and that they have escaped recognition for the reason that they usually disappear before or during the terminal illness, and even if persistent would be destroyed in the separation of the lung from the thoracic wall. Furthermore, they can be seen only in stereoroentgenograms which are taken by means of a technic adapted to this peculiar study, and even then considerable training and experience in the study of pneumothoraces are necessary to detect many of them.

Because of their very frequency and the fact that they occur only in tuberculosis, the physical signs which they produce are seldom recognized, these signs being attributed to variations in the tuberculous process itself. The diagnosis is possible by roentgenograms, by physical examination, and in some cases by clinical symptoms and course if the technic is sufficiently refined and is adapted to their detection.

The effect of a small, localized pneumothorax is the same on a small scale and in a limited area as that of a complete pneumothorax, such as we deliberately produce for therapeutic purposes. Râles are reduced in number and altered in character, and in certain limited lesions are entirely suppressed. The other physical signs of tuberculosis are so altered as to be less suggestive of an active lesion. The absorption of toxins is lessened, and in some cases the general condition of the patient is markedly improved. The collapse of the lung beneath the pneumothorax favors the development of fibrosis in that region, so that the immediate effects are in many cases favorable.

The improvement in general condition and the absence of apparently certain physical signs of the disease are likely to deceive both physician and patient unless it is recognized that a localized pnemothorax is present, and that the signs and symptoms are merely suppressed. In some cases of tuberculosis, therefore, in which localized pneumothorax exists, the diagnosis is necessary to a proper treatment of the case, and there are certain cases with limited lesion in which the presence of a small pneumothorax which completely suppresses the râles and alters the other sign may even obscure the diagnosis unless the pneumothorax is recognized as such.

Special Article

THE CASE OF MIRIAM RUBIN

The case of Miriam Rubin of Waukegan, Ill., has been so widely advertised in the newspapers, has been the subject of such sensational misrepresentation and has been commercialized by certain drugless healing cults to such an extent that THE JOURNAL determined to get the actual facts, and on March 1 sent a representative to Waukegan. His report follows:

On arriving at Waukegan I called on Dr. R. H. T. Nesbitt, the attending physician, from whom I obtained the following facts: Miriam Rubin, up to the time of this illness, had been attending school regularly in the second grade. She was a normal child, aged 8, of average size, slightly above the average in intelligence. In 1919 she suffered with influenza from which she recovered and in the spring of 1920 had a moderate case of measles from which she recovered fully. On Feb. 3 and 4, 1921, she complained of slight pain in the arms, hands and legs which did not, however, interfere with her normal movements or usual conduct. February 5, she began talking rapidly and practically continuously. The mother tried to quiet her but failed. The child chattered all day and all night according to the mother's report.

February 6, Dr. Nesbitt, who has been family physician and neighbor for many years, was called. He found the child talking rapidly, pronouncing her words distinctly, apparently quite rational and answering all questions intelligently and correctly. She did not talk about any particular subject but chattered about everything that would ordinarily interest a child. Her body was continuously moving from side to side, the arms and legs twitching spasmodically and irregularly over a wide range. The child did not complain of any pain or of any disagreeable sensation. Moving the head about in any manner did not distress her. There was no sensitiveness of the neck or of the skin over the spine or of any of the vertebrae. Moving of the arms and legs did not disturb her. She seemed docile and good natured, taking her medicine and submitting to the administration of an enema without any complaint. Her temperature was 100.6 rectally, pulse 90, respirations 30. An enema was given and a hot bath.

February 7, the condition was the same. Consultation was held with a local physician. On his advice a Chicago physician, Dr. Preble, was called.

[Dr. Preble reports that at that time the child had a temperature of 100.5 with an active delirium. The physical examination was negative, he states, and no further diagnosis than that of some unknown, unrecognizable infection could be made.—ED.]

Dr. Nesbitt had placed the child on 10 grains of sodium bromid every four hours. On advice of the consultant 5 grains of chloral was added to each dose. The symptoms continued with practically no abatement and a graduate nurse was secured. The progress of the case, report of which follows, is taken from the nurse's record.

February 8: The patient "slept for short periods." At 12:30 a. m. the temperature was 102.2, the pulse 140, the respirations 40. Beginning with this date the patient received but one dose of the bromid chloral mixture daily. She was also given laxatives as needed to control the bowels.

February 9: The temperature was 101.4, pulse 112, respirations 40. "Patient very restless and irrational," sleeping, however, for "short periods."

February 10: Condition continued the same, patient talking irrationally all afternoon but responding intelligently when spoken to.

February 11: Patient "insists on walking to bathroom"; has "not rested all night." During the afternoon she was restless.

The record indicates that Dr. Nesbitt visited the patient twice daily, and he stated to me that she rested or slept only for very short intervals.

February 12: Temperature varied from 100.6 to 102, pulse varied from 76 to 112, but was regular. On the morning of February 12 she was visited by Dr. Abt of Chicago.

[Dr. Abt reports that in addition to the increased temperature and delirium she showed inequality of pupils with strabismus. The spinal fluid taken by him at this time proved negative on examination. His diagnosis was epidemic encephalitis.—ED.]

February 12: At 5 p. m. Mr. Berger, a chiropractor, gave the patient a "treatment." It will be noted from the nurse's records abstracted above that the patient had not been talking continuously but had rested at short intervals. The temperature before the child was seen by the chiropractor was 101.4.

Later I saw Mr. Rubin, father of the child in his department store. Mr. Rubin stated that Dr. Abt gave a doubtful prognosis. On being asked how he came to select a chiropractor Mr. Rubin said that the Waukegan papers, several days previously, had reported the child's condition and this had been generally reported throughout the press. Mr. Rubin began to receive letters from friends and from strangers recommending various methods of treatment and various physicians and practitioners. He received a telegram from Detroit suggesting the employment of an osteopath or a chiropractor. This was followed by a letter from a person in Detroit who stated that his child had had a similar illness and had been cured by osteopathy. Several friends in Waukegan recommended a chiropractor named Berger. Mr. Berger saw Mr. Rubin and, according to the latter, said to him after seeing the child: "I know what is the matter with your child and I can cure her."

February 13: The temperature was 101, pulse 100. The nurse's record states that "the patient seems drowsy but has not slept all night." At 8 a. m. the chiropractor gave another "treatment." At 10 a. m. the patient "slept quietly for one hour," but "was more restless the following three quarters of an hour." At 5:20 p. m. the chiropractor gave another "treatment." At 8:30 p. m. the temperature was 101.6. The patient "slept one hour, but was restless all night."

February 14: At 4 a. m. the temperature was 101.2, pulse 100. The records state "more restless and talking."

February 14 to 18: The patient's condition continued practically the same. The chiropractor visited twice daily and gave treatments. Dr. Nesbitt also visited twice daily and administered medication consisting of laxatives as needed, an iodin and a magnesium oxid preparation. The patient slept at intervals for two and one-half to three hours but was continually active, at times delirious. During this period temperature average 100 to 101.8, pulse 100 to 120, the respirations 28 to 32.

February 19: "Patient complains of pain in the back."

February 20: Temperature 100, pulse 100, respiration 32. "Patient complains of pain in the back and pain in the popliteal region."

February 21: Temperature at 6 a. m., 99.6, pulse 100, respirations 32. The nurse records "has some difficulty in breathing."

[On this day she was seen by Drs. Abt and Preble in consultation. They report: "During the two weeks she has shown a continuous temperature with a maximum of 103 degrees, but now ranging between 99 and 100. Delirium still present but much less active. Emaciated and general condition bad. Right pupil larger than the left. Right eye turns in and upward. Neck slightly rigid but shows no deformity. Slight Kernig left side. Reflexes generally active. Slight fine tremor of both hands. Physical condition of chest and abdomen negative but respiratory rhythm abnormal, consisting of several rapid breaths, then a very deep inspiration which is held for several seconds and then repeated. Heart varies greatly in rate but is regular. The diagnosis is that of encephalitis unmodified by treatment and the prognosis is still uncertain."—ED.]

February 22: Condition continued about the same.

February 23: "Patient slept all night."

The child received one chiropractic "treatment" on February 22 and one on February 23. At this time the chiropractor's treatments were discontinued. According to Dr. Nesbitt, they had had no appreciable effect on the disease and the patient complained greatly of pain in the back. Mr. Berger, the chiropractor, visited the patient on Sunday, February 27, but did not administer a "treatment."

From what I learned and observed, the condition of the patient has changed little from February 23 to this time—March 1. The temperature has varied from 99.6 to 100, the pulse from 100 to 102, fairly regular, the respirations from 28 to 30. I saw the patient March 1. She lies in bed listlessly, eyelids droop, the right eye slightly turned upward. The breathing is stertorous and somewhat labored. She is greatly emaciated. She complains of pain in the back and in the abdomen and of pain on motion of the limbs. Her lips are much swollen and there are herpes. She cannot sit up without assistance. Raising of the arms is accompanied by moaning, as is any motion of the limbs. She answers questions intelligently but listlessly. She does not smile or show interest in what is going on. She objects to any attempts at touching her back.

Dr. Nesbitt says that improvement has been gradual and that it is his belief that the condition was not in any way changed by the chiropractic "treatment" except that the child became so sore and tender over the spine that she dreaded the "treatment" and now dreads having any one touch her.

It should be noted that according to the case record and the statement of Dr. Nesbitt at no time were opiates administered.

In conclusion, the case appears to be one of epidemic encephalitis which is following a course such as has been reported by many observers. As is now generally well known, some of the cases are of the lethargic type (lethargic encephalitis)—newspaper "sleeping sickness"—while others show extreme excitation and muscular twitching—newspaper "talking sickness." The case of Miriam Rubin is obviously of the latter type.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ACRIFLAVINE (See New and Nonofficial Remedies, 1921, page 22).

Acriflavine-Heyl.—A brand of acriflavine complying with the N. N. R. standards. In addition, acriflavine-Heyl is controlled biologically so that the maximum non-lethal dose for mice weighing 20 Gm. shall not exceed 0.0015 Gm.

Manufactured by the Heyl Laboratories, New York, under U. S. patent No. 1,005,176 (Oct. 10, 1911; expires 1928), by license of The Chemical Foundation, Inc.

To determine the maximum non-lethal dose the drug is dissolved in water in such concentration that 1 Cc. contains the quantity to be administered. A series of mice weighing 20 Gm. each are injected subcutaneously with small doses of the drug, each succeeding animal receiving an increase of 1/10 mg. of drug over the preceding one. The dosage under which all of the animals survive and over which all die is the maximum non-lethal dose.

PROFLAVINE (See New and Nonofficial Remedies, 1921, page 23).

Proflavine-Heyl.—A brand of proflavine complying with the N. N. R. standards. In addition, proflavine-Heyl is controlled biologically so that the maximum non-lethal dose for mice weighing 20 Gm. must not exceed 0.006 Gm.

Manufactured by the Heyl Laboratories, New York, under U. S. patent No. 1,005,176 (Oct. 10,1911; expires 1928), by license of The Chemical Foundation, Inc.

To determine the maximum non-lethal dose the drug is dissolved in water in such concentration that 1 Cc. contains the quantity to be administered. A series of mice weighing 20 Gm. each are injected subcutaneously with small doses of the drug, each succeeding animal receiving an increase of 1/10 mg. of drug over the preceding one. The dosage under which all of the animals survive and over which all die is the maximum non-lethal dose.

CALCIUM CACODYLATE (See New and Nonofficial Remedies, 1921, page 50).

Calcium Cacodylate-Ipco.—A brand of calcium cacodylate complying with the N. N. R. standards.

Manufactured by The Intra Products Co., Denver, Colo. No. U. S. patent or trademark.

DuBois' Iodoleine (See New and Nonofficial Remedies, 1921, page 153).

The following dosage form has been accepted:

DuBois' Iodoleine, Injectable, Ampoules, 2 Cc.—Each ampoule contains 2 Cc. of sterile DuBois' iodoleine equivalent to 0.6 Gm. of iodine.

TINCTURE OF DIGITALIS FAT-FREE-SQUIBB.—A biologically standardized fat-free tincture of digitalis corresponding in drug strength to the U. S. P. tincture of digitalis. Each Cc. represents digitalis sufficient to kill 1 Kg. of cat. The preparation contains about 70 per cent. of alcohol.

Actions and Uses.—The same as those of digitalis. Fat-free tincture of digitalis-Squibb was introduced at a time when the "fat" of digitalis was believed to cause gastric disturbances. At present this claim of superiority is not tenable and the preparation is sold simply as a standardized tincture of digitalis.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patent or trademark.

Digitalis is extracted with petroleum ether, the drug dried, and a tincture prepared from this according to the U. S. P. method. The preparation is biologically standardized so that each Cc. contains a minimum lethal dose for 1 Kg. of cat when injected intravenously (Am. Jour. Pharm. 9: 360, 1910).

It is a brownish-green liquid having a characteristic alcoholic odor and a bitter taste.

Good Effect of Pneumothorax in Tuberculosis.—Perhaps a more plausible explanation of the clinical improvement, so often manifested in cases of severe bilateral tuberculosis after more or less complete artificial collapse of one lung, is to be found in a possibly excessive hyperemia of the other.—H. Sewall, *Am. Rev. Tuberc.* 4:826, 1921.

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SATURDAY, MARCH 5, 1921

HOW MUCH FAT SHALL WE EAT?

During the war it was pointed out that sugar and fats are foods which we, as a nation, use much more freely than do most peoples. Before the shortage of foods entailed by the world-wide conflict an American consumed, on the average, 3½ ounces of fat a day; an Englishman, 3⅛; a German, 2⅓, and a Frenchman, 1½.[1] During the progress of the war the shortage of fats, which were diverted in enormous amounts from the usual channels of the food industries into the manufacture of glycerol and munitions, began to manifest itself early, particularly in the Central Empires. To persons who experienced the stringency, the importance of fats in the dietary never seemed debatable. It was repeatedly reported that in Germany the lack of fats was perhaps the cause of the greatest personal discomfort, and made the German most dissatisfied with his ration. Even when the diet was sufficient, it was said to be unsatisfactory if low in fat. The problem of how much fat should be allocated, if possible, for the uses of each person in the allied populations became the subject of consideration by international committees. The Interallied Scientific Food Commission, including Professors Armsby, Chittenden, Lusk and Mendel from this country, agreed to recommend to the respective countries concerned the adoption of 75 gm. (2⅝ ounces) of fat for the average man each day as a desirable minimum of fat to be secured for human consumption. This represents about 700 calories, or approximately one quarter of the average daily energy requirement of each person involved.[2]

Some of the physical ills which visited the underfed peoples of the war were charged to the shortage of fats in the ration. War edema serves as an illustration. Subsequent investigation has failed to justify most of these offhand conclusions.

That fat is a potent food is obvious from a consideration of its fuel value alone. A pound of fat yields two and one-fourth times as much energy as does a pound of any other nutrient utilized by man. This was the physiologic justification for the slogan: "Fats are Fuel for Fighters." A study of the dietary habits of different races at once suggests, however, that the apparent dependence of persons on fats may have psychologic or culinary motives as well as purely physiologic reasons. Thus, we are reminded that the Japanese, for example, habitually eat little fat. But it is the habit of both Europeans and Americans to use considerable fat, both on the table and in cooking. The taste of food is not so pleasing without it. Their recipes almost all call for fat in one form or another, so that when little or none is available, a change must be made in most of the methods of cooking. Virtually all food must be boiled, and is lacking in the flavor and texture to which we are accustomed. The food, no matter how nutritious it may be, will not taste good.[3] In other words, food without fat is likely to be without flavor and monotonous; and if a food is distinctly unpleasant and different from what a person is accustomed to, digestive upsets may result.

Accordingly, when those concerned with the nutritive welfare of the nation raised the query, "How much fat do we need?" the reply was that "it is impossible to say with definiteness."[4] The fact that there has been no available satisfactory information on this question is attributable to the experimental difficulties heretofore inherent in its solution. It is only in comparatively recent times that some of the essentials of an adequate diet have been discovered. Without knowledge of the importance of vitamins, for example, all earlier attempts to study the rôle of proteins, fats, carbohydrates or inorganic components of the diet by feeding them in varied proportions as isolated substances inevitably failed. A diet rich in fat might bring nutritive failure as readily as one poor in this foodstuff, the untoward outcome in either case being due to a neglected and unrecognized further factor in the food mixture. Again, the presence of fat in the diet might bring beneficial results because it was the chance carrier of vitamin A, associated with some fats more than others. Maignon[5] supposed that fats assume an important rôle in the utilization of protein, a rôle that carbohydrates are powerless to fill. His experiments were conducted by feeding mixtures of more or less isolated food materials without due consideration to the now well recognized need of accessory food factors or vitamins.

Recent controversies[6] regarding the necessity for fats in the diet fail to emphasize adequately the distinction in the significance of fats as sources of energy and as carriers of vitamin and of lipoids, regarding the

1. The data are taken from The Day's Food in War and Peace, published by the U. S. Food Administration under the auspices of the Women's Committee, Council of National Defense.

2. Commission scientifique interalliée du ravitaillement: Rapport général, Les ressources et les besoins alimentaires des pays alliés, premier rapport, Paris, October, 1918.

3. Food Guide for War Service at Home, prepared under the direction of the United States Food Administration, New York, 1918, p. 37.

4. Food and the War, a textbook for college classes, prepared under the direction of the United States Food Administration, Boston, Houghton Mifflin Company, 1918, p. 111.

5. Maignon, F.: Recherches sur le rôle des graisses dans l'utilisation des albuminoides, Lyons, 1919.

6. Aron, H.: Biochem. Ztschr. **92**: 211, 1918; **103**: 172, 1920. Salkowski, E.: Ibid. **94**: 205, 1919. Von Gröer, F.: Ibid. **97**: 311, 1919.

rôle of which we are still largely uninformed. Directing attention to the fats themselves rather than to the other food ingredients which commonly accompany them, Osborne and Mendel [7] have succeeded in securing satisfactory growth from an early age to full adult size in experimental animals on rations extremely poor in true fats. The diets consisted of mixtures of proteins, starch and inorganic salts, vitamins A and B being supplied by small portions of alfalfa and yeast. Such mixtures are not absolutely devoid of extractable fat, but the maximum of the latter amounted at most to a small fraction of 1 per cent. of the ration. Hence Osborne and Mendel cannot avoid the conclusion that if true fats are essential for nutrition during growth, the minimum necessary must be exceedingly small.

These observations, which obviously call for confirmation on other species, do not answer the question of the possible need of preformed lipoids, such as cholesterol and phosphatids. Can any or all of the latter be synthesized by the organism? Or must they be supplied as such? Hindhede,[8] whose results with young men correspond to observations on laboratory animals, has contended that fat is not required in the diet if a sufficient amount of fresh fruits and vegetables is eaten daily to supply vitamins. The striking facts here offered must not be accepted as an immediate dictum that dietary fats ought to be dispensed with, even if thousands of persons are exposed to the dangers of being too fat;[9] nor do they demonstrate that well-being is not best promoted by the inclusion of a liberal quota of fats in our daily intake. They are physiologic facts with which the study of nutrition may henceforth deal.

7. Osborne, T. B., and Mendel, L. B.: Growth on Diets Poor in Fats, J. Biol. Chem. **45**: 145 (Dec.) 1920.

8. Hindhede, M.: Molkerei Ztg. **28**: 152, 1918; abstr., Chem. Zentralbl. **2**: 745, 1918; Skandin. Arch. Physiol. **39**: 78, 1920.

9. The Danger of Being Too Fat, editorial, J. A. M. A. **76**: 523 (Feb. 19) 1921.

NEW ASPECTS OF THE PHYSIOLOGY OF URIC ACID

Not many years have elapsed since any new fact regarding uric acid or its chemical relatives was likely to attract the attention of physicians. Like ptomains, uric acid was pictured as an ever threatening source of danger; and when it had not been actually detected to occur within the living body, its presence was suspected or dreaded. Many of the fictions about uric acid in physiology have now been forgotten with the advent of a vocabulary that includes toxins and trypanosomes, spirilla and serums. Nevertheless, the biochemistry of the substances giving rise to uric acid has made notable progress in recent years. It would be an educational misfortune if the misdirected energies of the past were to lead to present-day indifference toward the physiology of nucleic acids and their derivatives.

A decade ago it was generally assumed that in the alimentary tract the nucleoproteins and nucleic acids which are a part of most human dietaries are split up by enzymatic reactions so as to liberate simple purin derivatives. The latter, in turn, were believed to be absorbed, so far as they are not destroyed by intestinal bacteria, and thereupon converted by oxidation into uric acid, the end-product of purin metabolism in man. Many indisputable facts contributed to this belief. The feeding of nucleic acid or of isolated purins normally results in an increased excretion of uric acid. The sequence nucleic acid, aminopurins, oxypurins and uric acid thus seemed to be a logical interpretation of the succession of intermediary biochemical events representing the fate of nucleic acids in the human body.

Thanks in particular to the researches of American biochemists, it has become clear that in the physiologic disintegration of the nucleic acids a series of compounds designated as nucleotids and nucleosids may arise. The former are complexes of purin, phosphoric acid and carbohydrate radicals; the latter, compounds of purins with sugar groups. There is much to suggest that the purin-sugar complexes may be absorbed as such and travel in the blood stream. In other words, the purin-fragments of the nucleic acids of the diet may in many instances be absorbed in more complex forms than was suspected only a few years ago. Accordingly, Thannhauser,[1] of the Medical Clinic in Munich, has formulated a theory of purin metabolism somewhat as follows: In the normal person the purins arising in nucleic acid metabolism probably circulate as nucleotids or nucleosids. It is the latter which are transformed in the tissues so as to liberate uric acid which, in turn, is promptly excreted. Hence we understand why the content of uric acid in the blood is ordinarily kept at a low, fairly uniform level. In the gouty, on the other hand, uric acid is equally well formed from the nucleosids; but, owing to disturbances in the excretory functions, it cannot be adequately eliminated. Faulty elimination is the most conspicuous factor in the gouty.

There is, indeed, more recent evidence that the nucleosids introduced directly into the organism by injection without alimentary intervention give rise to increments in the output of uric acid.[2] To what extent such purin complexes are the immediate precursors of uric acid in the organism is not yet clear. Nevertheless, physiology is witnessing a sort of recrudescence of Minkowski's older view that uric acid circulates in the form of some complex. He believed that the lessened excretion of uric acid in gout may be due to the existence of the purin in some abnormal chemical union, so that the resulting compound can be eliminated only with difficulty. It is significant that purin complexes have at length been demonstrated in the blood.[3] In this coun-

1. Thannhauser, S. J.: Ueber den chemischen Aufbau des Nukleinsäure-Moleküls und seine Veränderungen im Stoffwechsel des Menschen, Habilitationsschrift, Munich, 1917, p. 41.

2. Thannhauser, S. J., and Bommes, A.: Ztschr. f. physiol. Chem. **91**: 336, 1914. Rother, J.: Beiträge zum Nukleinstoffwechsel-Problem: Ueber Harnsäureausscheidung nach parenteraler Zufuhr von Purin-Nukleosiden beim gesunden Menschen, ibid. **110**: 245 (Sept.) 1920.

3. Thannhauser, S. J., and Czoniczer, G.: Experimentelle Studien über den Nucleinstoffwechsel, IX, Ueber den Nachweis und die Bestimmung von gebundenen und freien Purinen im menschlichen Blut- und Eiterserum, Ztschr. f. physiol. Chem. **110**: 307 (Sept.) 1920.

try, S. R. Benedict [4] has maintained for some time that uric acid exists chiefly in combination in the blood of most mammals. Recently, Davis and Benedict have actually isolated a crystalline compound of uric acid and a sugar. We may therefore confidently expect the chapter of purin metabolism to be rewritten in the near future, from the standpoint of the newer data.

ABSORPTION THROUGH GENITO-URINARY ORGANS

The marked variation in the permeability of the different membranes and protective coverings of the body and its orifices is not adequately appreciated by many even of those who are expected to deal with them in a practical way in medicine. For example, it is only beginning to become a feature of common physiologic information that absorption of most substances proceeds with great difficulty if at all through the mucous lining of the stomach, whereas, a few centimeters beyond the pyloric sphincter, the same materials readily find their way through the duodenal lining into the blood and lymph streams. Likewise, much confusion still exists as to the possibilities of absorption of diverse substances through the sound skin, a factor on which depends the possibility of administering drugs by inunction or of poisoning by cutaneous channels. Experience and experiment have taught medicine and the industries, which are peculiarly interested in the problem of absorption through the skin, that the answer may depend on the nature of the solvent, the properties of the substance concerned, and the occurrence of abrasions or injuries to the cutaneous surfaces. Again, the effectiveness of the pulmonary membranes and the passages leading to them as localities for absorption has lately been brought into renewed prominence.

The genito-urinary passages and organs are frequently the seat of the application of potent substances for either diagnostic, therapeutic or other less justifiable reasons. A knowledge of the absorptive functions of the various regions, notably the urethra, the urinary bladder, the ureter, the pelvis of the kidney, and the vagina is obviously important, not only to determine to what extent drugs may behave efficaciously in any of these localities, but also to appreciate the degree of possibility for the transfer of potent substances through the blood stream to all parts of the body. Every one realizes how profoundly absorption from the rectum may affect the organism as a whole. To what extent the genito-urinary lining membranes may facilitate the entrance of either beneficial or baneful products is not equally well understood, although the inefficiency of the urinary bladder as an organ of absorption has been emphasized frequently.

Under the auspices of the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association, Macht [1] of Johns Hopkins University has investigated the behavior of the genito-urinary organs toward a special group of drugs—local anesthetics—applied directly to various surfaces within these structures. This is, of course, precisely where they are introduced in many procedures of genito-urinary practice. They are employed to facilitate minor operations, to relieve pain, to permit instrumentation, to attempt antisepsis. The outcome of Macht's studies is the demonstration, alike of scientific and practical interest, that local anesthetics like cocain and its analogues are easily absorbed through various organs of the genito-urinary tract, with the exception of the bladder. The contrast between the behavior of this organ and the adjacent urethra is as marked as the analogous dissimilarity between the stomach and adjacent duodenal membranes. Macht urges that although the absorption of cocain, for example, through the ureter and pelvis of the kidney may seem to be chiefly of academic interest, yet in view of the modern use of such drugs as the iodids and thorium in these structures, the subject may also be of some practical importance.

The demonstration of rapid systemic absorption of drugs from the vagina serves to reemphasize the often unsuspected dangers that lie in careless and unwarranted irrigations of its passages with potent solutions as well as by other means which may expose the surfaces to soluble products. The mention of mercuric chlorid, phenol and cresols will at once awaken relevant thoughts. Entirely new, so far as we are aware, is Macht's demonstration of rapid absorption through the prepuce. This is significant from the surgical standpoint, as local anesthetics are widely employed in application through the prepuce, so that careless or excessive use may actually lead to toxic symptoms in patients.

Current Comment

FUNCTION OF THE ISOLATION HOSPITAL

The value of isolation hospitals in controlling the prevalence of contagious diseases is not easily determined. Some three decades ago it was claimed that if all those sick with such diseases as typhoid fever, scarlet fever and diphtheria were early isolated, these diseases could soon be exterminated. For this reason, as well as to care for the sick of the poor, many isolation hospitals were built. However, the development of such institutions has been contemporaneous with a general improvement of living conditions. Thus, the spread of infection has been limited through sanitary control of food and water. With these points in mind,[2] Chalmers has recently reviewed the effect of hospital isolation on the prevalence of typhoid fever, scarlet

4. Benedict, S. R.: Studies in Uric Acid Metabolism, I, On the Uric Acid in Ox and in Chicken Blood, J. Biol. Chem. **20**:633, 1915.

1. Macht, D. I.: On the Absorption of Local Anesthetics Through the Genito-Urinary Organs, J. Pharmacol. & Exper. Therap. **16**: 435 (Jan.) 1921.

2. Chalmers: The Functions of the Isolation Hospital, Proc. Roy. Soc. Med., Sec. Epidemiology and State Med. **2**: 1 (Dec.) 1920.

fever and diphtheria in England during the last thirty years. He has selected these three diseases for intensive study because they have a fairly comparable isolation rate and their epidemiologic features are frankly different. During this period, typhoid fever has declined, scarlet fever has fluctuated quite widely and diphtheria has definitely increased. The case mortality of typhoid has remained the same; in scarlet fever it has decreased from 6 to 2 per cent., and in diphtheria it has fluctuated. It appears, therefore, to Chalmers that although strict isolation together with certain other measures has markedly reduced the cases of such diseases as smallpox, plague and typhus fever, it is hard to prove that isolation has influenced to any marked degree the prevalence of such diseases as scarlet fever, diphtheria, measles and pertussis, or that it has had any appreciable effect on the prevalence of influenza, pneumonia and poliomyelitis. What, then, are the functions of an isolation hospital? Isolation of cases early in their development, especially in smaller communities, may prevent epidemics, protect other members of the family and check outbreaks in institutions or hotels. Furthermore, it is possible in such institutions to give better medical care than in the home in many instances. Above all, however, the isolation hospital furnishes a place for the careful study of the contagious diseases. Here under careful control the problem of carriers, of methods of infection, of modes of transmission, of prophylaxis and treatment by various methods may be studied without bias or uncontrollable complications such as frequently arise in private practice. Then, too, the isolation hospital may well serve as a teaching center for medical students, public health nurses and other public health officials on whom the community must depend for the early detection of communicable disease.

THE STATE FAILS

A child suddenly falls ill.[1] The malady is strange; physicians who are called give the disease a name, and tell the parents that any relief which science affords is only palliative and not curative, and that body forces frequently overcome the disease. The condition is actually encephalitis, an inflammation of the brain. As with other diseases affecting the nervous system, there ensue excitation, delirium, fever and twitching of the arms and legs. The parents are anxious and wish to do everything that is humanly possible. It is not surprising, therefore, that they accept the services of a pretender to scientific knowledge. They know no anatomy or physiology; they cannot judge between the true and the false; they know only that their child is sick and that a man who is permitted by the state to practice the healing art is offering them aid. They accept. How many parents would not? The chiropractor administers his treatment. Gradual remission of the symptoms ultimately occurs. The parents are overjoyed. In the first flush of their happiness, they write glowing testimonials to the chiropractor's ability. A miracle has been worked! The sensational press is furnished with "live" material. Sunday "feature pages" carry columns of write-ups and pictures and incidentally—or is it incidental—whole pages of advertisements of practitioners of the pretending science. "One hand washes the other." Then it is discovered that the miraculous cure was not a cure, that the treatments have in fact been so painful that the child's condition is possibly worse; that the chiropractor has been relieved of attendance, and that the child resents his muscular ministrations. Does the press give the public these facts? Do the advertisements cease? Not at all. What of the parents and the child? To whom shall they look? Whose duty was it to protect them against ignorance and incompetence? "The first duty of the state," says Disraeli, "is the care of the public health." When the state permits those with no scientific knowledge, who know nothing of physiology, of anatomy, of pathology, of infection or immunity to treat disease—no matter what the method employed—the state fails in its duty.

1. The Case of Miriam Rubin, this issue, p. 654.

MEDICAL FACTS AND CHIROPRACTIC FICTION

Throughout the length and breadth of the country there has recently been heralded an alleged marvelous cure of what the newspapers have been pleased to call "talking sickness." Not only have the newspapers made sensational stories out of it, but the chiropractors have used it as a basis for flaming newspaper advertisments extolling the virtues of their cult. Reading these news articles and advertisements one learns that an 8-year-old child was suffering from a "strange talking malady" that was so remarkable that "specialists from all parts of the country were interested in her case." Further, one learns that "every form of sedative had been administered without improvement," and "all the medical physicians and consulting specialists whose services were tendered" failed to bring relief. Finally, a chiropractor "pleaded for the opportunity to save the child and gained consent of the parents." In a "few moments" the chiropractor "adjusted" the "second and fifth vertebrae," and "the talking stopped"! And, continued the full page advertisements, in very large and very black type: "She Has Completely Recovered and Is as Healthy and Happy as You." So much for the fiction. It made a good newspaper story, especially for those newspapers that saw in it the opportunity to suggest to the chiropractic fraternity that, as their business had been given a magnificent boost in the news columns, it was highly desirable that they should add to this free advertising momentum an additional urge through the advertising pages. Rate card enclosed. What are the facts? Briefly these: That the child did not suffer from so-called "talking sickness"; that the alleged adjustment of the spine did not "cure" the "sickness" and, finally, that the child has not "completely recovered," but is still dangerously ill. The case was one of epidemic encephalitis, with a temperature ranging between 99 and 103 and active delirium, inequality of the pupils and strabismus. The improvement was gradual and that incident to the ordinarily observed progress of the disease. As shown by the case record, the chiropractor's "treatment" did not modify the course of the disease. The "talking" had ceased at intervals previous to his visit and continued at intervals after his

"treatment." But the publicity given the case offered great opportunities for advertising and, as advertising is an important part of the chiropractic curriculum it is but natural that this cult should take advantage of it.

MR. MASON AGREES

The testimonial of the Hon. William E. Mason for that preposterous piece of quackery "Nuxated Iron" is a rather well-remembered piece of nostrum history. "Nuxated Iron," if we are to believe the testimonials, is the preparation that was responsible for Jess Willard whipping Jack Johnson and, later, for Jack Dempsey defeating Jess Willard. In the case of the Congressman-at-Large from Illinois it cured, we are told, "that horrible tired feeling." Recently the honorable gentleman was twitted by a New York newspaper for having —among other things—written the "patent medicine" testimonial. In rising to a question of personal privilege for the purpose of answering the various accusations, Mr. Mason, in discussing his testimonial, admitted that his judgment in the matter might be questioned and — according to the *Congressional Record* — he added: "I think my judgment was bad." This makes it unanimous.

Association News

GRANTS FOR RESEARCH IN MEDICINE

The trustees of the American Medical Association have made an appropriation to further meritorious research in subjects relating to scientific medicine and of practical interest to the medical profession, which otherwise might not be carried out for lack of funds at hand. Applications for grants should be sent to the Committee on Scientific Research, American Medical Association, 525 North Dearborn Street, Chicago, before April 1, 1921, when action will be taken on the applications at hand.

THE BOSTON SESSION

Tentative Announcement of Additional Social Events

The Local Committee on Arrangements announces that the following additional social features are under consideration:

The Angell Memorial Hospital for Animals will be open for the inspection of Fellows and guests of the Association throughout the session. A reception at the Art Museum is being arranged from 9 to 11 o'clock on the evening of Wednesday of the week of the annual session. The Local Committee feels that this visit to the museum will be one of the most attractive features of the session. Arrangements for excursions to interesting points in Boston and vicinity are progressing satisfactorily. The Local Committee suggests that Fellows arrange to make an excursion to the Pilgrim Tercentenary at Plymouth on Saturday after the close of the Scientific Assembly.

Special Tour to Boston

The Chicago Medical Society, through the Harlan-Spears Tours, has arranged for a special train between Chicago and Boston for those who desire to use it in attending the annual session of the Association. The tour will be a "personally conducted" one and several different itineraries will be available. The rate covering all necessary expenses except meals while in Boston varies from $158.98 upward according to the Pullman accommodations and the tour selected. A deposit of $15 a person is required, this amount to apply against final payment or to be refunded in case the reservation is cancelled. Applications for space should be made to the Harlan-Spears Tours, 20 West Jackson Boulevard, Chicago.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

Personal.—Dr. Robert B. Corney has resigned his position as physician at the Arkansas State Penitentiary at Cummins.

Government Bathhouse at Hot Springs.—The United States Congress has appropriated $60,000 for the completion of the government free bathhouse at Hot Springs Reservation.

State Society Meeting.—The annual meeting of the Arkansas Medical Society will be held at Hot Springs, May 3-5, under the presidency of Dr. Gustavus A. Warren, Black Rock.

Health Program for El Dorado.—Hundreds of lunch stands and other places where food is served are opening along the streets of El Dorado in anticipation of the probable stampede to the oil fields, causing great need for sanitary regulation. Dr. Charles W. Garrison, state health officer, and the city council have inaugurated a health program estimated to cost $25,000, the expense to be underwritten by the chamber of commerce until some financial arrangement can be made by the city. A full-time health officer, a sanitary inspector, and a corps of public health nurses will be employed.

CALIFORNIA

Hospital Addition Opened.—The new unit of the Glendale Sanatorium and Hospital at Los Angeles was formally opened, February 19.

Reunion of Medical Officers.—The annual reunion of the medical officers who served at the Letterman General Hospital during the World War was held at the Union League Club, San Francisco, February 17.

Physicians Plan Professional Building.—Drs. Charles D. Lockwood, Raymond B. Mixsell, Frederick A. Speik and Paul A. Ferrier have secured land and propose to erect a four-story modern office building with laboratories, surgical rooms and other special conveniences for the use of physicians exclusively.

Social Work Conference.—At the California Conference of Social Work, held in San Francisco, February 22-26, mental hygiene was the subject of general discussion. Dr. William Palmer Lucas spoke on mental hygiene and social service, Dr. Samuel Langer, on mental hygiene and preventive work, and Dr. Ray Lyman Wilbur, on "Health in Relation to Recreation and Education."

COLORADO

Physician Forfeits Permit to Prescribe Alcohol.—It is reported that the permit to prescribe alcohol of Dr. Charles Mingus, Monta Vista, has been revoked because he had twice been convicted of drinking alcohol.

DELAWARE

Personal.—Dr. Fred F. Armstrong has been appointed medical inspector of schools of Wilmington, to succeed Mr. B. H. Beeler.

FLORIDA

Better Industrial Health.—Acting on the suggestion of Dr. Ralph N. Greene, state health officer, the managers of several of the principal industries in the state have adopted new sanitary and safety measures. The health officer's suggestions were made on the basis of the results of an industrial survey recently conducted by Dr. John A. Turner of the department of hygiene and sanitation, U. S. Public Health Service, and Dr. Alva C. Hamblin of the state board of health.

GEORGIA

Personal.—Dr. Thomas D. Longino, Atlanta, has been elected vice president of the board of trustees of Grady Hospital.

Health Board Elects.—Dr. William H. Doughty, Jr., Augusta, and Dr. James H. McDuffie, Columbus, have been reelected president and vice president, respectively, of the Georgia State Board of Health.

Conference of Laboratory Directors.—State board of health laboratory directors of southern states will hold a conference at the Piedmont Hotel, Atlanta, March 18-19, to discuss laboratory problems peculiar to southern states. Directors of municipal laboratories in the South are also invited.

Georgia Leads Nation in Hydrophobia Menace.—Statistics compiled by the state board of health show that in the past year the menace of hydrophobia was greater in Georgia than in any other state in the Union. More people in Fulton County were forced to seek preventive treatment from rabies than in any other county in the state. The Atlanta Humane Society is seeking a fund of $10,000 with which to carry out a campaign to free the streets of stray dogs.

INDIANA

County Nutrition Clinics.—Nutritional clinics will be established throughout the schools in Marion County outside of Indianapolis under the auspices of the county hospitals, the Parent-Teachers' Association and the Marion County Tuberculosis Association.

Personal.—Dr. James A. Price has resigned his position as superintendent of the Irene Byron Tuberculosis Hospital, Fort Wayne, to accept the superintendency of the Memphis Hospital and lecturer at Vanderbilt University Medical School. He has been succeeded by Dr. Eric A. Crull, Fort Wayne.

Hospital News.—The Home Hospital, Anderson, has been placed in the hands of a receiver, with orders for the sale of the real estate and the equipment.——The Randolph County Hospital, Winchester, was opened for the reception of patients, February 2. The building and grounds were donated by Mrs. Hetty Vorhis and the county expended $28,000 for equipment and remodeling.——Plans for the building of additional wings to the Marion County Julietta Home have been announced by the county board of commissioners. The cost will be about $100,000.

Bill to Provide Medical Aid for Poor Children.—A bill to provide for the establishment of the James Whitcomb Riley Hospital for the treatment and care of poor children afflicted with diseases or physical defects which may be relieved by proper medical and surgical attention, has been introduced in the state legislature. Children under 16 years of age whose parents or guardians are unable to bear the expense are eligible for free treatment on the recommendation of judges of circuit and juvenile courts. The site proposed is on state land near the present Robert D. Long Hospital, a state institution, and the Indiana University School of Medicine, Indianapolis. The children's hospital is to be under the management of the trustees of Indiana University who now have charge of the institutions mentioned. The bill carries an appropriation of $250,000 for construction and $150,000 additional for two years to provide for maintenance and equipment. The counties are expected to defray expenses of children sent from their jurisdiction.

IOWA

City and County Health Officer.—Dr. Daniel C. Steelsmith, Iowa Falls, has been appointed health officer of the city and county of Dubuque.

Marriage Law.—A bill has been introduced in the state legislature forbidding clergymen or others to marry persons failing to present a certificate attesting to their mental and physical fitness for matrimony.

KANSAS

Hospital for Railway Employees.—A new hospital will be erected at Parsons, at an approximate cost of $140,000, by the Missouri, Kansas and Texas Railway.

Personal.—Dr. Benjamin F. Mallory, Arlington, recently sustained severe injuries when his automobile was struck and completely demolished by a Santa Fe train.

Change of Date of State Society Meeting.—The dates of the meeting of the Kansas Medical Society, announced to be held at Wichita, May 4-6, have been changed to April 26-28.

KENTUCKY

Personal.—Dr. Eugene C. Roemele has been appointed physician of the Frankfort Reformatory to succeed Dr. Lindsay H. Morrison, West Point.

Extension of Health Work.—Fulton County plans to spend $12,000 during 1921 for the work of the health department, substituting two full-time health officers for its former part-time official and employing a sanitary inspector and four public health nurses. Dr. James M. Hubbard, Hickman, has been appointed health officer of Fulton County, and Dr. John M. Alexander, Fulton, assistant health officer.

LOUISIANA

Malarial Surveys.—In continuation of the fight against malaria, surveys will be made of the districts around Lake Charles, Franklin and Holly Ridge during 1921. The towns to be benefited by the survey have been asked to bear 50 per cent. of the expense, and the Rockefeller Foundation will contribute an amount equal to that appropriated by the state for the work.

MARYLAND

Personal.—Dr. A. E. Boycott, professor of pathology, and Dr. Charles Choynce, director of a surgical unit at University College Hospital, London, have arrived in Baltimore to spend a week in studying conditions at the Johns Hopkins Medical School.——Dr. Donald R. Hooker, associate professor of physiology at Johns Hopkins University, will relinquish his work of teaching in order to devote his entire time to research.——Dr. G. Garzon Cossas, Vera Cruz, Mexico, is in Baltimore for the purpose of studying local health and hygiene methods, as a representative of the Mexican Department of Hygiene.

Gifts to Johns Hopkins University.—At the Founders' Day Celebration of the Johns Hopkins University, February 22, announcement was made that the trustees of the university would supplement the fund of $215,000 raised by the Alumni Association for a memorial dormitory building at Homewood, so that the total cost of the building might be provided for. Dr. Goodnow also announced that an anonymous donor, who had provided a grant of several thousands of dollars for the art and medical departments, had signified his desire to continue the annual grant indefinitely, and that under the will of Dr. James Schouler, the university would receive $14,500, which, added to a previous gift, would bring the benefaction to $25,000, to be added to the endowment fund.——By the will of William Bennet Paca, the bulk of his estate, valued at about $100,000, has been left to the Johns Hopkins University. However, litigation has been commenced by a nephew of the deceased.

MASSACHUSETTS

Personal.—Dr. Frederick E. Jones has been appointed health commissioner of Quincy, to succeed Edward A. Dean.——Dr. George D. McGauran has been appointed consulting physician on the staff of the Anna Jaques Hospital.

Narcotic Act Violation.—It is reported that Dr. Henry C. B. Snow, Buzzards Bay, was recently fined $50 in the United States District Court when he pleaded guilty to an indictment charging him with violation of the Harrison Narcotic Law.

Boston City Hospital Extensions.—The mayor of Boston has requested the city council for two loan orders for improvements to the City Hospital. An order for $150,000 is requested for the purpose of erecting a Thorndike Memorial Building, $200,000 being available by the will of the donor. Another bill is for $629,000 for the erection of a building for the outpatient department.

MICHIGAN

Donation to Blodgett Home.—Mrs. John W. Blodgett and Mrs. D. A. Blodgett have each offered to donate $5,000 to the D. A. Blodgett Home, Grand Rapids, provided that the Blodgett Home association raises an equal sum.

Personal.—Dr. Joseph H. Hathaway has been appointed medical inspector of schools of Highland Park.——Dr. Horace C. Mudge, Port Huron, has resigned his positon as physician at the county infirmary, after forty-eight years of continuous service.

Health Course at University.—The health service department of the University of Michigan has announced that a two-hour course in health will be included in the curriculum next fall. Registration in the course will be required of all freshmen at the university.

Arrangements for State Society Meeting.—Plans for the annual session of the state medical society, to be held in Bay City, May 24-26, were formulated at a meeting of the Bay County Medical Society, Bay City, February 14. At this meeting addresses were delivered by Dr. W. J. Deacon of the state department of health, and Dr. Frederick C. Warnshuis, Grand Rapids, secretary of the state medical society.

Marriage Law Proposed.—A bill has been introduced in the state legislature requiring all persons applying for marriage licenses to present a licensed physician's detailed report of the physical condition of each applicant. All persons afflicted with venereal diseases, epilepsy, or "open" tuberculosis are barred by the proposed bill from contracting marriage. No license may be issued until ten days after application has been made.

MISSOURI

Personal.—The Boone County Medical Association gave a banquet, February 15, in honor of the eightieth birthday of Dr. Andrew W. McAlester, Columbia, former dean of the school of medicine of the University of Missouri.

NEW YORK

Laboratory Supply Station Established.—The State Department of Health has established a laboratory supply station at Carthage, to supply the needs of Jefferson, Lewis and St. Lawrence counties. Dr. Frederick G. Metzger, Carthage, has been placed in charge.

Brooklyn Physicians Want Drug Commission Abolished.—Passage of the Lord bill abolishing the narcotic drug commission, was urged by several Brooklyn physicians, who protested against the rulings of the commission. The governor has recommended that the commission be abolished.

Typhoid Claims Allowed.—The village of Herkimer has agreed to the payment of $5,000 in settlement of claims of $37,500, filed against the village following the typhoid fever epidemic in 1918. It was charged that the cause of the epidemic was traceable to the water supply of the village.

Personal.—Dr. Loren Percy Ranson has been appointed medical officer of the police and fire departments of Syracuse. ——Dr. Walter G. Frey, president of the Queens County Medical Society, and his son, Dr. Walter G. Frey, Jr., both of Long Island City, were seriously injured recently in an automobile accident.

Postgraduate Course in Public Health.—The Albany Medical College announces the continuation of its postgraduate course in infectious diseases and public health for practicing physicians and especially for health officers. This course is given jointly by the Albany Medical College and the New York State Department of Health. Registration is limited to graduates in medicine. The course consists of informal conferences and practical demonstrations with special consideration given to the recent advancement in diagnosis and treatment of pneumonia and tuberculosis, the essential features of infection and immunity, diagnostic laboratory tests and the prophylactic and therapeutic use of vaccines and serums. The organization and work of industrial medical departments will also be considered. Personal clinical instruction will be given to groups of four physicians. Special work in venereal diseases will be arranged for classes of two. The course extends from March 3 to June 17, one day a week being devoted to instruction.

New York City

Cartwright Prize.—The Cartwright Prize Lecture of Columbia University was delivered at a meeting of the New York Academy of Medicine, February 17, by Dr. Abraham L. Garbat on "The Typhoid Carrier."

Harvey Lecture.—Dr. S. B. Wolbach, associate professor of pathology and bacteriology in the Harvard University Medical School, will deliver the eighth of the current series of Harvey Society Lectures at the New York Academy of Medicine, March 12, on the subject of "Typhus Fever and Rickettsia."

Personal.—Dr. Percy R. Turnure has received from the French government the Cross of the Legion of Honor for "eminent services to France during the World War."—— Dr. Frederick S. Westmoreland, who has been connected with the bureau of hospitals of the New York City Health Department for fifteen years, has resigned.

Three Hospitals Merge for Rehabilitation of Industrial Workers.—"Reconstruction Hospital," the first of its kind in the country, will be devoted exclusively to the rehabilitation of workers suffering from industrial injuries or occupational diseases by the application of medical methods developed in war work. Park Hospital, the De Milt Dispensary, and the Clinic for Functional Reeducation, have been merged into this institution. The property and equipment of the three old institutions have been turned over to the new hospital and $500,000, in addition, will be spent to extend the present facilities. The Institute for the Crippled and Disabled will also be affiliated with the work. Dr. W. Gilman Thompson has been selected as the head of the new organization. The medical staff includes Drs. Joseph A. Blake, John A. Hartwell, Victor G. Heiser, Irving S. Haynes, Charlton Wallace, Charles L. Dana, Henry Sage Dunning, Jacob D. Kernan, and Robert G. Reese. The activities of the hospital will include not only hospital therapeutics, but scientific research, vocational training, and provisions for reemployment.

OHIO

Personal.—Dr. Frank S. Pomeroy, Chardon, was the guest of honor at the banquet of the Geauga County Medical Association, the occasion marking the completion of his forty-second year in the practice of medicine in the county.

Naval Surgeon in Aeroplane Accident.—Dr. Kent C. Melhorn, Kenton, surgeon, U. S. Navy, while attempting to cross the mountains in answer to an emergency call in Haiti, where he is on duty, was badly injured when the engine of the aeroplane failed at an altitude of 1,500 feet. The aviator volplaned to 500 feet when the plane crashed to earth.

OREGON

Personal.—Dr. Frederick D. Stricker, Grants Pass, has been elected secretary of the state board of health, to succeed Dr. David N. Roberg, resigned.

Extends Eugenic Law to Women.—The state legislature, February 19, passed a bill requiring that women as well as men seeking marriage licenses shall be examined as to their mental and physical fitness.

Growth of Health League.—The Oregon League for the Conservation of Public Health, organized simultaneously with the league in the state of Washington, now has a membership of more than 1,200. The league has undertaken an intensive campaign to disseminate information regarding public health matters throughout the state.

PENNSYLVANIA

Dispensaries Closed for Want of Funds.—Dr. Albert P. Francine, director of the division of tuberculosis of the state department of health, referring to the action of the bureau in closing a number of dispensaries throughout the state, attributed the move to the inadequacy of the department budget. A number of community organizations have arranged to furnish rent-free quarters, and the state will provide a physician, nurses, and supplies.

Tuberculosis Society Reorganized.—At its annual meeting, January 19, the Pennsylvania Tuberculosis Society put into effect its revised constitution and by-laws which make the organization thoroughly representative of all sections of the state, in contradistinction to the local character that it formerly had. Permanent tuberculosis organizations from nearly all counties have already become affiliated. The new officers are: Dr. James M. Anders, president; Dr. White and Dr. William D. Robinson, vice presidents, and Dr. Ward Brinton, secretary.

Philadelphia

Address by Visiting Physician.—At the meeting of the section on general medicine of the College of Physicians of Philadelphia held at Thompson Hall, February 28, Dr. Henry A. Christian, Boston, spoke on the "Right and Wrong Uses of Diuretics."

Health Council Reports Big Gains.—The Philadelphia Health Council and Tuberculosis Committee has reported results attained in open-air school classes with 297 undernourished children, who are being fortified against tuberculosis. Both boys and girls have gained, on an average, 1.7 pounds in weight during the last three months at a rate greater than is normally expected. Children who are simply predisposed to tuberculosis are given a pint of milk each day by the health council, while those who are tuberculous have a pint added each day by the board of education. Milk is given in the middle of the morning, and of the afternoon, with a rest period following. Nourishing soups, custards and creamed vegetables are served at noon.

TEXAS

Personal.—At the annual meeting of the board of directors of the Texas Public Health Association held recently at Austin, Dr. Zachary T. Scott, Austin, was elected president. ——Dr. Holman Taylor was elected president of the Tarrant County Tuberculosis Society at a recent meeting of the board.

Health Week.—By proclamation of the governor the week beginning March 13, has been set aside as Health Week. At the close of this campaign, which is to be conducted by the state health officer, all cities and towns will be inspected and rated according to their sanitary condition. This rating will be filed with the state board of health.

VIRGINIA

Personal.—Dr. Coleman B. Sansome has been appointed health officer of Newport News, to succeed Dr. William F. Cooper, resigned. This appointment of a full-time health officer is the initial step in the reorganization of the city health department.——Dr. J. Garnett Nelson, Richmond, has been elected president of the Richmond Tuberculosis Association.

WASHINGTON

Hospital News.—The Shelton General Hospital, with a capacity of fifty beds, has been completed. The hospital was erected at a cost of $50,000, from funds contributed by citizens of Mason County.——It has been announced that one of the several hospitals for crippled children, to be erected by the order of the Mystic Shrine, will be located in Spokane.

WISCONSIN

Pamphlet on Communicable Disease Control.—The method of controlling communicable diseases employed in Shorewood, a Milwaukee suburb, has been outlined in a pamphlet issued by a state board of health. The important innovation in the Shorewood plan is the isolation of patients and placarding of homes on suspicion of contagious disease, pending positive diagnosis.

GENERAL

Urologic Journal Transferred.—The *Journal of Urology* has become the property of the American Urological Association. It will continue to be published in Baltimore under the editorial supervision of Dr. Hugh Hampton Young, assisted by an executive editorial committee and by a number of collaborators, including the former associate editors. The *Journal* will be published monthly, providing sufficient material is submitted.

Hygiene Congress Abandoned.—The International Congress of Hygiene, which was to have been held in Geneva in May, has been abandoned, for the reason that the low value of the currency of many countries and the high value of the Swiss franc make it impossible for many countries to send delegates. Fully 600 delegates from all parts of the world had been expected to attend. It was proposed by Great Britain and the United States, that they be permitted to subsidize delegates of nations with abnormally low exchange, but these delegates, regarding it as a form of alms giving, refused the offer.

Postgraduate Scholarships.—The New York Post-Graduate Medical School and Hospital announces that there will be available this year six scholarships under the terms of the Oliver-Rea Endowment. The scholarships are awarded to practicing physicians of the United States and provide for the expenses of tuition at the New York Post-Graduate Medical School. According to the wishes of the donor, physicians in Pennsylvania will receive preference in the award. Applications may be sent to the president of the New York Post-Graduate Medical School and Hospital, Twentieth Street and Second Avenue, New York.

Convention of American Congress on Internal Medicine.—The fifth annual convention of the American Congress on Internal Medicine was held in Baltimore, February 21-26, the sessions being devoted to demonstrations and clinics and to inspection trips through the hospitals of Baltimore. The degree of fellow of the American College of Physicians was conferred on seventy members of the congress during the convention. The following officers were elected: Dr. Sydney Miller, Baltimore, president; Drs. Ellsworth Smith, St. Louis, and James Rae Arneill, Denver, vice presidents; Dr. Clement R. Jones, Pittsburgh, treasurer; and Dr. Frank Smithies, Chicago, secretary-general. Dr. J. M. Anders of Philadelphia was elected president of the American College of Physicians.

International Eugenics Congress.—The Second International Eugenics Congress, to be held in New York, September 22-28, will consider the results of research in questions of race improvement. The preliminary announcement indicates, in brief, the matter to be presented in the sectional meetings: (1) The results of research in the domain of pure genetics in animals in relation to studies in human heredity. (2) Factors which influence the human family, and their control; also the differential mortality of eugenically superior and inferior stocks and the influence on such mortality of factors such as war and epidemic and endemic diseases. (3) Human racial difference, with sharp distinction between racial characteristics and the unnatural associations often created by political and national boundaries; racial differences in disease and psychology, and the history of race migrations and their influence on the fate of nations. (4) Eugenics in relation to the state, to society, and to education. Inquiries relative to the congress should be addressed to Dr. C. C. Little, secretary-general, American Museum of Natural History, Seventy-Seventh Street and Central Park, West, New York.

Bequests and Donations.—The following bequests and donations have recently been announced:

Children's, Allegheny, Mercy and Western Pennsylvania hospitals, Home for the Friendless, Pittsburgh, Pittsburgh Free Dispensary, Westmoreland Hospital, Greensburg, Pa., Mount Pleasant Memorial Hospital, Westmoreland, Pa.; Braddock (Pa.) General Hospital, Homestead (Pa.) Hospital, each $200,000, and Lying-In Hospital, New York, $600,000 by the will of Henry Clay Frick.

J. C. Blair Memorial Hospital, Huntingdon, Pa., $10,000, by the will of William Thompson.

Carney, Boston City, Massachusetts General, Frost Massachusetts Homeopathic, Children's, and St. Elizabeth's hospitals, Boston; Massachusetts Charitable Eye and Ear Infirmary, and Industrial School for Crippled and Deformed Children, equal shares of the bulk of the estate of Joseph Thompson, Boston.

Stetson Hospital, Philadelphia, $1,500, by the will of Elena T. Hults, Philadelphia.

Protestant Episcopal and Pennsylvania hospitals, each $500,000, Pennsylvania Society to Protect Children from Cruelty, $300,000; and Gynecean Hospital and Preston Retreat each $150,000 by the will of Helen F. Massey, Philadelphia.

Visiting Nurses' Association, New York and Brooklyn Board of Charities, each $168,000; Brooklyn Children's Aid Society, $41,000, Brooklyn Society for the Prevention of Cruelty to Children and St. Christopher's Hospital for Babies, each $30,000; Brooklyn Hospital, $17,000, by the will of Alfred Treadwell White.

LATIN AMERICA

New Hospital in Uruguay.—The public assistance authorities have purchased a spacious lot in the suburbs of Montevideo to build a public hospital of 500 beds. The first appropriation for the work amounts to $140,000.

School for Trachomatous in Argentine.—A school for children infected with trachoma has just been opened at Tucumán. This school is an outcome of a suggestion made at the scientific congress held in that city in 1916. It is expected that other schools of a similar character will be organized in other Argentine cities where trachoma prevails.

Chilean Radium Deposit.—According to newspaper reports radium has been discovered in the saltpeter region of Chile. The matter attracted so much attention in France that several prominent radiologists, including Mme. Curie, have requested the government of Chile to create a radium laboratory, and an appropriation for this purpose has been granted by the government.

New Medical School in Pernambuco.—The Faculdade de Medicina was recently inaugurated at Recife in the state of Pernambuco in northeastern Brazil. Dr. Armando Gayoso delivered the principal address of the occasion. The state of Pernambuco has recently concluded arrangements with the federal government in respect to the public health service according to the plan called Prophylaxia Rural, and a station has already been organized at Villa Ribeirão.

Foundation of the Cuban Medical Association.—In the last issue of *Vida Nueva*, Dr. Francisco M. Fernández, the editor of the *Archivos de Oftalmología* and acting editor of the *Crónica Médico-Quirúrgica*, urges the foundation of a Cuban medical association, which will unite in a single organization the different medical associations which now exist in that country, so that Cuba wll have a society much along the same lines of those existing in the United States, Argentine, Colombia and Mexico. Its need is much felt in that country.

Personal.—Dr. Ricardo Aguilar, the editor of the *Revista Médico-Quirúrgica* of Teguciaglpa, Honduras, has been appointed professor of physics in the School of Medicine of Honduras.——Dr. A. Neiva has returned to Rio de Janeiro after his official trip to North America and Japan to study matters connected with the public health service.——Dr. C. Azevedo has also returned to Rio from a trip to Europe.——Professor Paz Soldán of Lima, founder and editor of the *Reforma Médica* has been visiting medical institutions at Rio on his return from his official participation in the recent international sanitary conference at Montevideo.

Trachoma at El Salvador.—In the last issue of the *Archivos del Hospital Rosales* Dr. Luis O. Arévalo of San Salvador comments on the prevalence of trachoma at El Salvador in

recent years. Among 4,513 individuals examined at random in the National Guard, penitentiaries and public schools, only one was found infected with trachoma, although many suspicious cases were found which later proved to be follicular conjunctivitis. During the last eight years twenty-two trachoma patients have been treated at the Hospital Rosales, the number of patients having increased in the last three years. Trachoma was apparently introduced in Salvador by Syrian or Turkish immigrants. In an examination made by Drs. Arévalo, Bailey and Peralta of eighty-four Syrians at San Salvador, four were found infected by trachoma and one suspected case. Dr. Arévalo has, in addition, treated eight cases, three of them in a single family. Dr. Arévalo acknowledges the assistance he received in this work from Dr. Charles A. Bailey of the Rockefeller Foundation and thinks that the work accomplished by the foundation in combating hookworm disease and malaria in El Salvador should stimulate the government to continue to conduct a similar campaign against trachoma. He recommends the enforcement of immigration laws on the exclusion of trachoma patients, the training of examining physicians in the diagnosis of this disease, the compulsory reporting of trachoma, and public lectures on this subject.

FOREIGN

Spanish Journal Discontinues Publication.—*Plus Ultra*, the luxuriously printed and illustrated Madrid journal, has discontinued after a three years' existence. The editor states that this action is due to the cost of paper and labor.

Carozzi Head of Department in Labor Bureau.—Prof. L. Carozzi, who has long been connected with the clinic for occupational diseases at Milan, has been appointed chief of the department for hygiene in the International Labor Bureau at Geneva.

Emil Fischer Foundation at Berlin.—The late Prof. Emil Fischer bequeathed 750,000 marks to the Prussian Academy of Sciences, the income of which is to be used to aid young German chemists doing research work in organic, inorganic or physical chemistry.

Sir G. Sims Woodhead Resigns Editorship.—The publishers of the *Journal of Pathology and Bacteriology*, London, announce the retirement of Sir G. Sims Woodhead from the active direction of the *Journal*, a position he has held since he founded the publication in 1893. The new editor is Dr. James Ritchie. He will be assisted by Drs. A. E. Boycott and H. R. Dean.

Necropsies Obligatory in the Hospitals of Italy.—The *Gazette des sciences médicales* of Bordeaux relates, with envious comment, that the right of postmortem examination has been conferred on the directors of university clinics and chiefs of hospital services throughout Italy. In case of opposition, the scientific necessity for verifying the causes of death will overcome the interdiction.

Parkin Prize.—The Royal College of Physicians of Edinburgh announces the Parkin Prize of £100, open to competitors of all nations, for the best essay "On the Effect of Volcanic Action in the Production of Epidemic Diseases in the Animal and in the Vegetable Creation, and in the Production of Hurricanes and Abnormal Atmospheric Vicissitudes." Particulars regarding the conditions of the contest may be secured from the secretary, Dr. J. S. Fowler, Edinburgh.

Greek Congress of Hygiene and Demography.—As already mentioned, the First Pan-Hellenic Congress for Hygiene and Demography is to convene at Athens in April. The exposition in connection therewith is to be open for two months, from April 25 to June 25. The *Grèce médicale* of recent date gives the full details for exhibitors. The committee in charge includes Prof. G. Phocas, president, and Dr. P. Rondopoulos, rue Nikiforou 14, Athens, Greece, secretary-general. Great preparations are said to be under way for this first convention of the kind in that country.

Prize for Work on Cancer.—The Mörsel Foundation offers a prize of 10,000 marks for the best work on the etiology, diagnosis or treatment of cancer, representing important progress. A second prize of half the amount will be given for the second best work. Competition is open till Oct. 1, 1922. Competing articles are to be sent to the director of the Institute for Experimental Cancer Research at Heidelberg. The competing works must be in German and must have been published between Jan. 1, 1921, and Oct. 1, 1922, or be ready for publication when presented.

Japanese Government Disinfection Office.—The brush industry, which flourished in Osaka during the war, is now in a serious condition owing to the campaign against infected shaving brushes in various parts of the world. The department of agriculture and commerce of the Japanese government plans to open in April a national disinfection office, probably in Kobe, where all imported bristles and other animal hair for the manufacture of brushes will be disinfected. Those who use materials that have not been given a certificate of disinfection will be punished by a fine.

Malaria Sanatorium at Rome.—The Asilo Antimalarico Communale was recently inaugurated at Rome to provide a home and schooling for the children of families living in the malaria infested marshes around Rome. The institution was founded on the initiative of Professor Marchiafava, one of the leaders in the campaign against malaria, and the municipality has placed a tablet on the building with a tribute to his years of devoted services as physician and hygienist, and above all as originator of the plan by which Rome has been kept free from malaria for so many years.

International Congress for History of Medicine.—The date July 1 to 5, 1921, has been selected for the international congress of medical history, which will convene at Paris in the halls of the Faculté medecine. There are to be three sections, medicine, pharmacy and veterinary art, and the program includes a number of trips through museums, excursion to the ancient château of Saint-Germain-en-Laye, etc. There is to be a historical exposition in connection, and the committee in charge is appealing to physicians for the temporary loan of articles of historic interest, instruments, medals, prints, books, etc., for the exposition. The secretary of the congress is Dr. Laignel-Lavastine, 12 place de Laborde, Paris.

The Fellowship of Medicine and the Post-Graduate Medical Association.—At a meeting of the general council of this British organization, Dec. 10, 1920, the following resolutions were adopted and referred to the newly appointed executive committee:

(1) That the executive committee be requested to consider the advisability and practicability of appointing a general organizer of postgraduate medicine with full powers to take such action as he thinks fit in order to promote the facilities for postgraduate education in the United Kingdom for practitioners registered in this country and for visitors from Dominions and foreign countries. And that the government be approached with a view to obtaining an annual grant. (2) That the executive committee be requested to report at an early date on the possibility of providing a hospital solely for postgraduate study and the possibility of obtaining a grant in aid. (3) That it is desirable to obtain as early as possible suitable accommodation for postgraduates attending courses of instruction.

American Gifts for European Science.—The *Deutsche medizinische Wochenschrift* records that Dr. Lange of Chicago has sent to Professor Paltauf of Vienna 7,000,000 crowns collected in America. Also that another sum of $10,000 has been forwarded from America to aid the university professors. It was sent to Professor Pirquet for distribution. The Rockefeller Foundation has also appropriated $60,000 for assistance to the Vienna clinics. This sum is said to be equivalent to 40,000,000 crowns at the present rate of exchange. The salaries of the regular university professors at Vienna were increased materially last year, being 45,000 crowns, increasing by 4,000 crowns every fourth year to a maximum of 70,000. The *Münchener medizinische Wochenschrift* likewise reports that Dr. A. Stein, chief of the Lenox Hill (formerly the German) hospital, has recently sent a large sum collected in Ameica to Frankfort-on-the-Main to be applied for scientific purposes.

International Urologic Society.—The *Presse médicale* states that the first meeting of this new society is to be held at Paris, July 5-7, 1921. The three subjects appointed for discussion are nephritis with uremia; remote results of treatment of traumatism of the urethra, and pyelography. The first subject is to be introduced by Dr. Hogge of Liége, Dr. Horder of London, Dr. Foster of New York and Dr. Teissier of Lyons; the second subject by Dr. Kidd of London, Dr. Gardini of Bologna, and Dr. Pasteau of Paris. The subject of pyelography will be introduced by Drs. Waters and Young of Baltimore, Dr. Lazio of Milan and Dr. Papin of Paris. The honorary president is Dr. Watson of Boston; president, Dr. Hurry Fenwick of London; vice presidents, Drs. Alessandrini of Rome, and Keyes of New York. Dr. Desnos of Paris is the secretary general and Dr. Pasteau, the treasurer general. The congress bureau consists of Drs. Legueu of Paris, Verhoogen of Brussels and Brongersma of Amsterdam.

Deaths in Other Countries

Dr. **H. Brunner,** chief of the asylum at Diessenhofen, Switzerland, author of various works on the periodicity of vital phenomena.——Dr. **R. Moyano Cruz** of Puento Genil, Spain.——Dr. **Octacilio de Camará,** senator of Brazil from the federal district.

Government Services

Medical Officers, United States Navy, Relieved from Active Duty

CALIFORNIA
San Francisco—Duncan, H. B.

CONNECTICUT
Hampton—Potter, A. L.

NEW JERSEY
Elizabeth—Myers, S. Z.

OREGON
Portland—Whiteside, G. S.

VIRGINIA
Roanoke—Butler, W. W. S.

New Duty for Medical Officers

The Secretary of the Interior has requested of the Secretary of War, the Secretary of the Navy and the Secretary of the Treasury that examination of civilian employees under the retirement act of May 22, 1920, shall be made, whenever practicable, by medical officers of the Army, Navy and Public Health Service. Such medical officers, however, will not be required to leave their station for the purpose of making examinations.

Reduction Affects Medical Corps

The reduction of the Army to 175,000 by the recent act passed by both houses of Congress will affect the size of the Medical Corps, in contradistinction to the other branches of the military establishment. The Medical Corps is allowed 6.5 officers per thousand enlisted men in the entire Army, so under the proposed limitation, the total number of officers will not exceed 1,138. The number of medical officers now in the service is about 1,200, but, according to an announcement from the Surgeon-General's Office none will be discharged, as the reduction will be made through natural losses. It was declared that this law would not interfere with the appointment of members of the medical profession in private life as interns in Army hospitals. Just as soon as vacancies occur applications will be considered. At the present time about fifty interns are taking courses, and their terms will expire in July, 1922. These vacancies will be promptly filled by the Surgeon-General. Interns successfully passing courses are appointed first lieutenants in the Army immediately on graduation.

Officers to Have Postgraduate Study

The Army Reorganization Act contains a clause permitting the detail of not to exceed 2 per cent. of the commissioned officers of the Regular Army in any fiscal year as students in technical, professional and other educational institutions, or as students, observers, or investigators at industrial plants, hospitals and other places best suited to enable such officers to acquire special knowledge or experience. Under the provisions of the act, the Army Medical Department can recommend annually that 2 per cent. of its commissioned personnel be detailed to the leading medical schools and institutions of the country. The course of study will not exceed one year. In this connection the Surgeon-General has made a change in the curriculum of the Army Medical School to the end that medical officers who graduate therefrom, and subsequently desire to take a course in public health be credited with one year of work, thus enabling them to graduate with the degree of Dr.P.H. in one year, instead of the two years' resident study usually required for these diplomas.

Army Medical Schools and Reserve Corps Officers

The Medical Department of the Army conducts two schools, the Army Medical School at Washington, D. C., and the Medical Field Service School at Carlisle, Pennsylvania. The latter has but recently been established and has not yet been opened to classes. The educational training plans of the Surgeon-General contemplate a four months' course at Carlisle for all recent appointees in the Medical, Dental and Veterinary Corps of the Army. The training at the Field Service School is chiefly military in order to fit the recent appointee for his medicomilitary duties. This is followed, in the case of medical officers, by a course of approximately six months at the Army Medical School where the officer receives a postgraduate professional course of instruction in subjects important from a military standpoint, such as preventive medicine, epidemiology, bacteriology, parasitology, serology, nutritional, sanitary and clinical chemistry, psychology, surgery, roentgenology and ophthalmology. The clinical subjects are taught in connection with the Walter Reed Hospital. Similar courses are being planned for dental and veterinary officers. The Carlisle school will eventually be opened to reserve officers and to the R. O. T. C. (Reserve Officers' Training Corps), medical, dental and veterinary units of which are already being organized in some of the Class A schools. The extent to which the facilities of this school can be offered to the reserve officers depends upon the general training policy of the War Department and the Congressional appropriation. Reserve officers will not be considered eligible for admission to the Army Medical School at Washington until they have had a course of training at the Carlisle school. For some time to come, at least a year, it is announced the limited space and appointments at the Army Medical School at Washington will not suffice for the training of reserve officers.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Feb. 4, 1921.

Number of Doctor Diplomas Issued

Information in regard to the number of doctor diplomas in medicine issued by the various medical colleges of France during the school year 1919-1921 has just been published:

Schools	State Diplomas	University Diplomas	Subtotals
Algiers	47	..	47
Beirut	57	..	57
Bordeaux	237	4	241
Lille	47	..	47
Lyons	343	5	348
Montpellier	232	12	244
Nancy	33	..	33
Paris	547	29	576
Strasbourg	3	..	3
Toulouse	109	2	111
Totals	1,655	52	
Grand total			1,707

The grand total is the highest that has ever been reached, being nearly 461 more than the maximal figure attained so far (1,246 for the school year 1898-1899). The seventy-two candidates who passed the state examination (the *staatsexamen* under the German régime) are not included in the preceding table. The thirty-one who presented doctor theses under the German régime are also omitted.

Election of Professor Béhal to the Academy of Sciences

The Academy of Sciences recently elected a member for the section of chemistry, to fill the vacancy caused by the death of Prof. Armand Gautier. The choice fell upon Monsieur Béhal, who is professor of toxicology in the Ecole de pharmacie de Paris, and a member of the Academy of Medicine. Béhal is the author of numerous works on creosote, camphor, etc. During the war, he was in charge of the Office national des produits chimiques et pharmaceutiques.

Vital Statistics for the First Half of 1920

The bureau of statistics has just published the vital statistics for France, including births, deaths, marriages and divorces, for the first half of 1920. For the first time since the war the statistical report gives the conditions in the ten departments that were invaded. It also takes account of the three departments in Alsace-Lorraine (Bas-Rhin, Haut-Rhin and Moselle). For the ninety French departments (eighty-seven before the war, with the three comprising Alsace-Lorraine added), the statistics for the first half of 1920 were:

Population (census of 1911)	41,476,272
Births	424,668
Deaths	356,722
Marriages	333,241
Divorces	12,262

This report is the best that has appeared for many years. The excess of births over deaths amounts to 67,946, a better figure than has been reached for a long time. A comparison

with the first six months of 1919 can be made only with reference to seventy-seven departments, for at that time no exact account was taken of the ten invaded departments, or of the three departments in Alsace-Lorraine. For the seventy-seven departments the records of 1919 showed an excess of 192,052 deaths over births (360,743 deaths and 168,691 births), whereas in 1920 the report shows an excess of births over deaths of 36,236 (336,642 births and 300,406 deaths). Thus, with the decrease in the deaths and increase in the births, the improvement is considerable.

The International Organization of Intellectual Work

The intellectual interests of humanity are represented by a large number of highly specialized associations. These associations have established certain services and certain institutions, with Brussels as their center. But their scope has remained limited. Their ideal plans do not get beyond the stage of mere projects or outlines of plans of action. The associations do not seem to know to whom to present their desiderata. The congress of international associations that was held in Brussels last September took up this situation of affairs and sought means whereby a veritable international organization of intellectual work could be assured, as the need of such an organization is being felt more and more. It was the sentiment of the congress that this new organization ought to be affiliated with the League of Nations and be supported by it. Consequently the following resolution was drawn up:

Resolved, That the League of Nations should establish, within itself, an international organization for the promotion of intellectual work analogous to the organizations that it has created for manual labor, public health and economic interests. This organization, inspired with the great needs of intellectual work, should enjoy a large measure of autonomy. Its purpose would be to aid in the rapid development of science, and education in general, by coordinating the activities of the three groups of organizations; namely, the national intellectual institutions of the various countries, the international associations that pursue certain definite educational and scientific ends (now existing or created in the future), and the international foundations or institutes, existing or to be created, such as scientific bureaus, an international university, an international institute of bibliography, an international library, an international museum, international laboratories, an international patent office and bureau of copyrights, bureau of standards, etc. With this end in view, it would seem desirable that the League of Nations summon, at the earliest possible moment, an international conference whose duty it shall be to draw up the statutes of such an organization and also formulate, in regard to the problems of international reconstruction, definite conclusions and make the necessary recommendations of a scientific character.

A resolution was also passed to the effect that the international organizations already affiliated under one head by the union of the international associations, with headquarters at Brussels, be consolidated and developed by the new organization, the older organizations serving as a nucleus for the new.

Law to Repress Enticement to Abortion and to the Use of Measures to Prevent Conception

Up to the present time, our penal code has contained only laws against criminal abortion and has provided no penalties for enticement to abortion. Now, however, that abortion and birth control propaganda have reached a stage that is dangerous to the public welfare, a new law has been drafted, which extends the scope of the old law and provides penalties for enticement to abortion and also for the spread of information in regard to methods of birth control. The new law provides penalties for enticement to the crime of abortion, even though such enticement did not result in abortion, either by speeches delivered in public places or public meetings, by the sale or offering for sale, though not public (or by bringing to public notice by means of posters or literature distributed along the public highway or in public places), or by distribution in the homes, delivery in wrappers or in envelops closed or unclosed, by mail or by any distributing or transporting agent, of books, or any written or printed matter whatsoever, announcements, placards, drawings, sketches or pictures, whether through the mediation of medical offices, or so-called medical offices, or otherwise. The law also provides a penalty for the sale or offering for sale, or the distribution in any manner whatsoever, of remedies, substances, instruments or anything whatsoever which the person in question knows is intended as an aid in committing the crime of abortion, even though abortion shall not have been either committed or attempted, and although these remedies, substances, instruments or articles of whatsoever description destined to be used as a means of bringing on abortion may be in reality useless for the realization of such a purpose. Further, it is also considered as a misdemeanor to support any propaganda by which, through the use of any of the means just described, a person may describe or divulge or offer to reveal any procedure designed to prevent pregnancy or to facilitate the use of such procedure. Enticement to abortion is punishable by imprisonment for from six months to three years and a fine of from 100 to 3,000 francs. Offered aid to prevent conception is punishable by a term of imprisonment of from one to six months and a fine of from 100 to 5,000 francs.

The Second International Congress of the History of Medicine

The second International Congress of the History of Medicine will be held from July 1-5, 1921, in the halls of the University of Paris, under the chairmanship of Professors Jeanselme and Ménétrier. It will consist of three sections: medicine, pharmacy and veterinary medicine. At this congress there will be given a retrospective exposition of the progress of medicine, and a historical medical museum will be inaugurated. Information in regard to the congress may be secured from Dr. Laignel-Lavastine, general secretary of the congress, 12 *bis*, Place de Laborde, Paris, 8-me.

LONDON

(From Our Regular Correspondent)

Feb. 7, 1921.

Indictment of the Ministry of Pensions

In spite of the crushing burden of the war, the government, notwithstanding its protestations, has been guilty of gross extravagance in many directions. It is apparently actuated by the motive that when the taxpayer has given so much for the cost of the war it does not matter much if he is fleeced a bit more for the extravagance used to purchase popularity or, rather, to buy off unpopularity. But the country—slowly, as usual—is awakening to the evil. Sir John Collie, who was formerly director of medical services, in an address to a lay audience on "Some Medical Problems," said that until recently the public conscience tolerated a surprisingly chaotic condition in the administration of the public medical services. Preventive medicine had never really had a chance in Britain of showing what it could do in the battle with disease. The lamentable conflict on control, and the absence of cooperation and of coordination between the different departments of state and the various allied organizations had hitherto crippled the usefulness of state medicine. It was not prematurely that a ministry of health was established. In spite of all that had been said against it, he believed that it would go far. But an enormous amount of wasteful expenditure was incurred at the ministry of pensions. At this crucial stage of the financial history of the country, we should carefully scrutinize the present methods to determine whether better results might not be obtained by less expensive machinery. He referred to the boarding and reboarding of pensioners before the medical boards. No man was examined unless three physicians were present constituting a "board." The three physicians were supervised by a president of the board, by directors, deputy directors and the like. There was also an enormous clerical staff, expensively housed in premises scattered throughout

the United Kingdom; and last, but not least, there were a number of higher officials drawing considerable salaries. Sir John Collie drew a comparison between this elaborate procedure and the simple one of insurance companies confronted with similar problems. For them one physician was enough. Many men now in full employment in the public services were still drawing pensions for some trifling injury, such as a scar, of the existence of which they were reminded in damp weather. Such cases should be commuted by lump sums.

Anthrax from Shaving Brushes: New Official Warning

The ministry of health has again called attention to the danger of anthrax from a new shaving brush of which the antecedents are unknown. Many deaths have resulted from the use of such brushes, and there are still many dangerous brushes on the market in the hands of retailers. They have been imported from Japan. This importation has been prohibited, but brushes in the hands of retailers have not been recovered. It is suggested that health officers should communicate with all retail pharmacists and other dealers in their districts and warn them of the dangers of Japanese brushes which may still be in stock. If the owners refuse to have the brushes destroyed, they are to be securely wrapped up and returned to the wholesalers with an explanation. A new method of disinfection declared to be reliable has been made public by the ministry of health. The brush should be thoroughly washed with soap and water containing a little washing soda, and then allowed to stand for half an hour in warm water containing a little soda. It is then placed in a warm solution of formaldehyd (one part of 40 per cent. solution of formaldehyd and sixteen parts of water) for half an hour, after which it is allowed to dry. But it is declared that complete sterilization of the brushes is impracticable. This method will free the exposed parts of the hair from infection, but does not affect spores embedded in the handle of the brush. The subjoined statistics on treatment, based on 800 cases, are given by the medical inspector of factories.

Treatment	Cases	Deaths	Mortality Per Cent.
Serum only	200	8	4
Excision only (of the part first affected)	397	44	11.1
Excision and serum	174	25	14.4
No special treatment	29	14	48.3

Thus, serum alone gave the best results. It will be noted that excision and serum gave worse results than either separately. Of this anomaly no explanation is given. Possibly it is due to the fact that this treatment was adopted in the worst cases.

The Passing of the Indian Medical Service from the Hands of Europeans

The Indian Medical Service, which has a great record both for administrative and for scientific work, appears to be slowly but surely passing from the British physicians into those of Indians. From 1855 to 1913, only 109 Indians took commissions; yet in 1913 the list was headed by three Indians. During the war many temporary commissions were given to Indians, and the London schools had ever increasing numbers on their lists. Now there is great difficulty in obtaining British candidates for the service in spite of increased pay, pension and better conditions. The fear of the future is the deterrent. The average Britisher objects to the possibility of being junior officer under Indians. But if Indians show the capacity for higher posts, as undoubtedly many of them do, they cannot be prevented from occupying them. Indeed, recent legislation has conferred on Indians increased powers of self-government, which ultimately must diminish the extent to which India is ruled and administered by the white man. But no broad-minded person can regret that.

MEXICO CITY

(From Our Regular Correspondent)

Feb. 6, 1921.

Health Activities

The federal department of public health has decided that leprosy and ophthalmia neonatorum be included among reportable diseases. This measure is intended, so far as leprosy is concerned, to determine approximately the spread of this disease and to be a preliminary step toward the possible establishment of a national leprosarium. As regards gonorrheal conjunctivitis, the purpose of the board of health is to inspect every case to determine whether or not the proper treatment has been carried out. Experience has proved that in spite of the recommendations of medical congresses and the fact that oculists have asserted most vigorously the need of early treatment in this disease, there are still some persons who consider that ophthalmia neonatorum is due to the action of the outside "air" and go to see a physician only when the child's eyes have been destroyed wholly or partially from a functional standpoint. In former years some of our sanitarians were not quite convinced of the infectiousness of leprosy, but nowadays it is considered a fact that the segregation of lepers brings about a marked decrease in the number of cases, as has been observed in the Scandinavian countries during the last fifty years and in the Philippines since American control. The department of public health has therefore under consideration the establishment of prophylactic measures in our country.

According to the official report of the department, not a single case of yellow fever was reported last week in the whole of Mexico.

As some cases of yellow fever have been reported in the province of Escuintla, Guatemala, Mexican authorities have ordered a six-day quarantine of people coming to Mexico from the infected region, unless they have a certificate showing that they have been vaccinated with Noguchi's anti-leptospira vaccine.

Venereal Diseases

The Society of Prophylaxis Against Venereal Diseases held its annual meeting a few days ago. A report was presented on its activities, which consisted chiefly in the operation of a free evening dispensary for the treatment of indigent persons infected with syphilis and other venereal diseases. New officers were elected: president, Dr. Genaro Escalona, a professor of the school of medicine and member of the Academy of Medicine; vice president, Lic. Roberto Esteva Ruiz, a well known lawyer and writer; and as one of the two secretaries, Dr. Ernesto González Tejeda. The secretariat has been installed at the National School of Medicine, Avenue del Brazil, No. 33.

Progress of a Scientific Society

The Mexican Society of Biology, constituted largely by students of this subject, is extending its activities. An instance of this may be found in its journal, the *Revista Mexicana de Biología*. Besides its other merits, the *Revista* is very strict so far as its advertising is concerned. The manager of the publication is Dr. Eliseo Ramírez, 3/a, calle de Donules, No. 79, Mexico City.

Personal

Dr. Alberto Madrid is the new minister from Guatemala, and he will also become a professor at the school of medicine. ——There have arrived from the United States, Drs. Alfredo Caturegli, who has just been appointed Mexican minister to France, and Manuel Aveleyra, who was in the United States on a business trip.——Dr. Eutimio López Vallejo has become director of the school of veterinary medicine.——Dr. Pedro Pérez Grovas has become director of the school of diagnostic of the department of health, and Dr. José Torres Torija,

director of the medicolegal service of the federal district.—Drs. Miguel R. Soberón and Luis Garduño Soto, who have served for a long time at the clinic and nursing school supported by the Société des Femmes de France, have been decorated by the French government.

BUDAPEST

(From Our Regular Correspondent)

Jan. 25, 1921.

Increase in Lunacy

Dr. Popovici, chairman of the Transylvania Roumania lunatic asylum committee of the country council, in a recent address gave some statistics which, although they were selected arbitrarily, may be taken as showing that there has been a 100 per cent. increase of patients suffering from lunacy during the last ten years in Transylvania. He expressed the opinion that drink and unwholesome and insufficient food were accountable for a greater proportion of the cases of insanity in Transylvania than in Roumania as a whole, and that drink, insufficient food and hereditary influence, respectively, were accountable in Transylvania during the quinquennial period of 1914-1919 for 19.1 per cent. and 25.8 per cent. of the admissions. He considered that, in view of the large proportion of cases due to the last-mentioned cause, something should be done to prevent insane patients having children. As regards the food question, this is already much improved, wheat flour instead of maize flour being distributed among the workmen and poor classes of the province.

Compulsory Vaccination in Bosnia and Herzegovina

An interesting decision was given last month in the court of Larajevo, capital of Bosnia, with regard to vaccination, a decision that gains in significance not only from the fact that it was given in a country (Jugoslavia) where democracy in very much in vogue, but also from the reasons that guided the justices in arriving at it. The case in which it was given was an appeal from the Larajevo courts concerning a man named Ulitsanovics, who refused to be vaccinated during a sporadic outbreak of smallpox on the ground that the operation, compulsorily enforced in accordance with the provisions of the law, was an infringement of his personal liberty—the argument so often put forward by antivaccinationists. He also referred to the fact that in England, the most democratic country of the world, nobody can be forced to undergo vaccination. The justices of Larajevo decided against Ulitsanovics, and the appeal to the higher court confirmed the judgment. The judge, in giving the decision in the latter court, said that society based on the rule that each one was a law into himself would soon be confronted with anarchy and want of order. Real liberty for all could not exist under the operation of a principle which recognizes the right of each individual person to use his own will in respect to his person or his property, regardless of the injury that may be done to others. It is the acknowledged power of a local community to protect itself against an epidemic threatening the safety of all, and to exercise that right in particular circumstances and in reference to particular persons.

Poisons in Accident and Suicide

The data for 1920 published by the state statistician of Great Roumania present some interesting figures with regard to the accidental and suicidal poisonings during that year. The total of deaths due to accident or negligence was 6,384; of these the deaths of 146 males and 83 females were due to poison; 1,311 males and 329 females committed suicide, of whom 261 males and 67 females chose poison as the means of ending their lives. Thirty-four deaths are returned as due to anesthetics, chloroform being responsible for nineteen, or nearly two thirds; of the others, the ethyl chlorid mixtures caused one; chloroform and ether, one; ether, three and nitrous oxid, two, while in the others the nature of the anesthetic was not stated. Of the poisons taken by accident, opium with its derivatives is by far the most common, and is credited with thirty-one deaths. Phenol (carbolic acid) is still, strange to say, the favorite draft of suicides. Except the ease of obtaining it, there is little to explain its position in this respect. Oxalic acid, probably for a similar reason, is in great demand for suicidal purposes, having been effective in twenty-four cases, while only three accidental deaths are due to its use. Hydrochloric acid caused eleven suicidal and two accidental deaths. Potassium hydroxid caused thirty-seven suicidal and seven accidental deaths. Phosphorus matches and hanging with a cord are also much in vogue, but the statistics do not give particular data about these methods of suicide. There is no separate mention made of poisoning by wood alcohol, a substance responsible for many deaths in Roumania in recent years, but I suppose, if any such have occurred, they are included in the six accidental deaths returned as due to "alcoholic spirits."

BERLIN

(From Our Regular Correspondent)

Feb. 3, 1921.

Effect of Restricted Diet on Health

The view of alienists that in many cases the chronic misuse of alcohol is the sole cause of mental disease was confirmed with all the certainty of an experiment by the restricted diet forced on Germany during the war. According to the result of an inquiry set on foot in 1918 by the Prussian medical authorities, during the year 1917, only twenty-eight cases of delirium tremens in men and seven in women were admitted to the public asylums for the insane, as compared with 665 and forty-six, respectively, in 1913. The cases of delirium in men showed, then, in 1917 a decrease of 95 per cent., and in women a decrease of 84 per cent. Among the 8,565 soldiers with mental disease admitted to the public asylums for the insane in 1917, there were only two with delirium tremens. The total number of cases of mental disturbance in men due to the abuse of alcohol, admitted to the hospitals in 1913, was 4,224; in 1917, the number had fallen to 781, a decrease of 81 per cent. The number of alcoholics among the 8,565 soldiers with mental disease was 121, or 1.4 per cent., as compared with 3.5 per cent. among the male civilian population. In the private asylums the decrease in the number of deliriants in 1917 was 94 per cent. for the men and 64 per cent. for the women. Among alcoholics as a whole, the decrease, as affecting the men, was 70 per cent., and among the women, 56 per cent. The statistics in regard to the decrease in the number and the amount of sick benefits allowed by the Prussian health insurance associations tell the same story. The special homes for inebriates render the same kind of a report and state that in 1917 there were only 10 per cent. as many applicants for admission as there were in 1913.

Physicians' Strike

In several cities, during the last two years, owing to workmen's strikes, physicians have felt compelled also to proclaim a strike, partly because the exercise of their profession was almost impossible, owing to the fact that electric and gas plants, and sometimes even the city waterworks, were shut down; and partly because it was hoped that a strike of physicians might compel the workmen to resume work. In most instances the physicians achieved their purpose. That was the case two years ago in Bremen, where the burghers, in order to work against a general strike of the workmen, also ceased from their activities, to a great extent. Not only general practitioners but also hospitals refused medical assistance even in obstetric cases and under other circumstances in

which the lives of persons were threatened. In the case of patients who before the strike were undergoing treatment, treatment was discontinued, and operations were not undertaken even though postponement endangered the life of the individual. Those of the hospital patients who could leave were dismissed, as it was impossible to secure water and provisions. By such measures as these, the labor strike, which had lasted eleven days, was brought to an end in just a few days.

In Stuttgart the strike of the physicians did not go to such lengths as it did in Bremen. If the life of a person was endangered, assistance was not refused. The patients who were being treated when the strike was declared continued to be treated. In urgent cases operations were performed and patients were even admitted to hospitals. The patients who were already in the hospitals were allowed to remain if it was deemed necessary. Even with this milder type of strike the physicians accomplished their purpose at the end of five days. Likewise in Brunswick the same result was accomplished within the same length of time. Here, too, medical assistance was given only in case of dire need. In Berlin, in spite of the trying conditions that have arisen owing to the repeated workmen's strikes, not the least of which was the shutting down of the electric and gas plants, there has been no strike of the physicians as yet. To be sure, the physicians have on several occasions threatened to strike. In regard to the important question as to how a strike of physicians is to be viewed from a legal standpoint, Dr. Ebermayer, president of the senate of the supreme court, has expressed himself to the effect that we must distinguish between a workmen's strike that follows a pacific course and one that is accompanied by violence and bloodshed. In the latter case, physicians are morally bound to render aid to injured persons, especially in critical cases in which life is at stake; but he is inclined to doubt that a physician is under legal obligations to render assistance in such cases. A private practitioner is carrying on a trade or profession, and no one can compel him to exercise his trade in general or in any particular case, even though by his refusal to do so in any individual case harm should arise for certain persons. Even though a physician were under contract to perform certain services, he would not be compelled to exercise his profession if by doing so he would expose himself to the danger of suffering injury to life or limb in the presence of violent uprisings. As for a peaceful strike, the physician can usually, here as well, refuse to render medical assistance. But if he has begun to treat a patient before the outbreak of a strike, he is under legal obligations to continue such treatment. He can, however, refuse to accept new patients. This legal obligation obtains more particularly for physicians who are under contract to serve a krankenkasse (sick benefits fund), a hospital or the state. In such cases they are under obligation not only to continue to treat patients whose treatment was already begun, but also to carry out the terms of their contract.

Death of Wilhelm Waldeyer

January 23 saw the passing of one of the most famous anatomists of modern times—Wilhelm Waldeyer. Four years ago, on his eightieth birthday, he was granted a patent of nobility and received the name von Waldeyer-Hartz. Waldeyer attained the advanced age of 84, and up to a few weeks before his death was in full possession of his mental faculties. Last year, he published a volume of personal reminiscences, which give evidence of the active life he led. He had laid a broad foundation on which to build his future career. From 1856 to 1858 he studied, in Göttingen, mathematics and the natural sciences. Later he took up medicine, mainly owing to the influence of Henle, whose excellent lectures on anatomy he had attended in Göttingen. Henle soon recognized his pupil's genius and succeeded in awakening in him a permanent interest in anatomy, so that Waldeyer's first position, which he held until 1861, was in the Anatomic Institute in Greifswald. From 1864 to 1865, he studied certain physiologic problems in Breslau and became, soon thereafter, an instructor in anatomy and physiology at the university of Breslau. He did not stop at that, but included pathologic anatomy within the circle of his endeavor, in order not to lose the connection with medicine as a whole; and in 1867 he had the satisfaction of being appointed to a chair of pathologic anatomy in the University of Breslau. As the result of his investigations in this field, he published some of his most important works; namely, on cancer and the central nervous system. In dealing with the question of cancer, he furnished an important contribution on the development of carcinomas, in which he conceived of a cancerous tumor as a neoplasm arising from the glandular epithelium. In his "Investigations in the Realm of the Anatomy of the Central Nervous System" he declared that the so-called neuron possesses anatomic, genetic, functional and trophic nerve unity.

In 1872, Waldeyer accepted a position on the faculty of the University of Strasbourg, as director of the Anatomic Institute. In 1883, he was given a chair of anatomy in the University of Berlin and continued as a professor of this university until 1910. After resigning from this position he devoted himself exclusively to science, serving the while as permanent secretary of the Academy of Sciences, which post he did not give up until 1919.

Every one who had the pleasure of knowing Waldeyer personally was charmed by his many-sided knowledge and the wide range of his interests. Therein lay the strength of his talent as a teacher. He made a deep impression on his hearers, and, with never-ending patience, he was able to awaken in beginners a taste for anatomy, which is not just to everybody's liking. Especially his lectures on topographic anatomy were ideal, and his demonstrations on intestinal ruptures always attracted a great many students. In this field he did good service, especially in preparing surgeons for their future tasks.

Waldeyer has published a large number of scientific works. In the seventies he devoted himself chiefly to embryology and microscopic anatomy. His most important investigations deal with the ovaries, the teeth and the hair. Other investigations deal with the eye, the position of the pelvic organs, the course of the blood vessels in the abdomen, and the detailed anatomy of the brain and spinal column. The latter studies, especially those that were made on the gibbon and the gorilla, constitute a part of the work that he did as a member of the Internationale Vereinigung für Hirnforschung (Brain Commission). This commission was composed of anatomists from the various countries, and from time to time they exchanged, with each other, the results of their investigations. Waldeyer was the leading spirit of the commission. In fact, after the death of Virchow he took upon himself more and more the rôle of the Nestor of German scientific medicine. His ability as an organizer, his great energy and his harmonious personality made him adapted, as are but few, to become the leader of great scientific undertakings. He also succeeded Virchow as the editor of Virchow's Jahresberichten (Reports). Other studies, not of a strictly scientific nature, he published in the Transactions of the Academy of Sciences; for example, an essay on instruction in anatomy in Berlin, and his esthetic and anthropologic discussion on the skull of Frederick the Great, in which he betrays so much acumen. Anthropologic questions always had great interest for him. He also took part in the discussion that arose in regard to Schiller's skull. His last work, "Reminiscences," contains many allusions to his manifold interests and his various forms of activity.

Marriages

JESSE FRANKLIN GAMBLE, captain, M. C., U. S. Army, to Miss Leah M. Abadie, both of Houston, Texas, at Des Moines, Iowa, January 11.

STEWART EMMART RAUCH, Bethlehem, Pa., to Miss Viola Moore Bergey of Allentown, Pa., January 11.

ARTHUR EDWARD S. CASEY, Philadelphia, to Miss Elizabeth Helen Conway of New York, February 4.

CHARLES BROWN CRAWFORD, Washington, D. C., to Miss Joyce Ince of Toronto, Ont., January 22.

MARION NICHOLAS YORK to Miss Essie Octavia Tillery, both of Little Rock, Ark., February 12.

JAMES JOSEPH KING to Mrs. Virginia Pernet Lawrence, both of New York, February 19.

DA COSTA WALKER to Miss Toka Ann Stewart, both of Hot Springs, Ark., February 6.

HAROLD IRVING FREEMAN to Miss Sophie Bene Baruch, both of New York, February 12.

JONAS WALTER WOLF, Yonkers, N. Y., to Miss Marie Horwitz of New York, recently.

LEO LOUIS HARDT, Rochester, Minn., to Miss Ruth Sharer of Chicago, February 12.

JOHN P. LINDSEY to Miss Ida Belle Queener, both of Pruden, Tenn., February 10.

LOUIS FAULKNER to Miss Mildred Frink, both of Chicago, January 29.

Deaths

James Franklin Stevens ✠ Lincoln, Neb.; Chicago Medical College, 1884; died, February 23, aged 61. He was at one time dean and professor of principles and practice of medicine, and at the time of his death professor of introductory medicine in the University of Nebraska College of Medicine; physician to St. Elizabeth's Hospital, Lincoln.

Walter Reed Iszard, Brooklyn; Hahnemann Medical College and Hospital of Philadelphia, 1902; aged 39; genitourinary surgeon to the Cumberland Street and Prospect Heights hospitals, and physician to the Peck Memorial Hospital and Methodist Episcopal Home for the Aged, Brooklyn; died, February 18.

Henry Stow Garlick ✠ Laredo, Texas; Medical College of Ohio, Cincinnati, 1895; University of Pennsylvania, Philadelphia, 1896; aged 45; formerly otologist and laryngologist to Presbyterian and Speers Memorial hospitals and Episcopal Hospital for Children, Cincinnati; died, February 9, from pneumonia.

Eudora Meade Draper Faxon, Boston; College of Physicians and Surgeons, Boston, 1892; Tufts College Medical School, Boston, 1894; aged 78; a member of the Massachusetts Medical Society and New England Society of Psychiatry; died, February 11.

George Bowers Snyder, Chicago; Jefferson Medical College, 1876; aged 67; surgeon to the Union Pacific Railway Company for twenty-five years; and a practitioner of Hays, Kan., for forty-two years; died, February 22, from chronic interstitial nephritis.

Reinhold Kanzler, Ogden, Utah; Northwestern University Medical School, Chicago, 1910; aged 38; lieutenant, M. C., U. S. Army, and discharged, Dec. 17, 1918; a member of the Utah State Medical Association; died February 17, from septicemia.

Samuel Ruff Skillern, Ardmore, Pa.; University of Pennsylvania, 1854; aged 87; a member of the Medical Society of the State of Pennsylvania; contract surgeon during the Civil War; died, February 17, from chronic interstitial nephritis.

Mark Russell McAlpin, Leesville, La.; Tulane University, New Orleans, 1887; aged 64; secretary of the Vernon Parish Medical Society; health officer of Leesville and Vernon Parish, and for four terms coroner; died, January 31, from heart disease.

John H. Forrest, Marion, Ind.; Bennett College of Eclectic Medicine, Chicago, 1880; aged 62; a member of the first city council and for many years a member of the board of education and board of health of Marion; died, February 6.

Barzillai Bean Foster ✠ Portland, Maine; Medical School of Maine, Brunswick and Portland, 1870; aged 72; at one time president of the Maine Medical Association; a practitioner of Portland for half a century; died, February 17.

Hugh Philip MacAniff ✠ Philadelphia; Medico-Chirurgical College of Philadelphia, 1897; aged 50; also a druggist; a member of the staff of the Northwestern General Hospital, Philadelphia; died, January 29, from pneumonia.

Isaac N. Enloe, Jefferson City, Mo.; Missouri Medical College, St. Louis, 1883; aged 60; a member of the Missouri State Medical Association; president of the local school board for fourteen years; died, February 15.

Charles H. Lemon ✠ Milwaukee; Rush Medical College, 1891; aged 57; chief surgeon for the Milwaukee Electric Company for twenty-five years; also a clergyman; died, February 22, from cerebral hemorrhage.

John Howard Davis, East Liverpool, Ohio; Cleveland University of Medicine and Surgery, 1895; aged 48; a member of the Ohio State Medical Association; died, February 10, from cerebral hemorrhage.

Joshua M. S. Heath, Bellaire, Ohio; Western Pennsylvania Medical College, Pittsburgh, 1900; aged 50; a member of the Ohio State Medical Association; died, February 15, from cerebral hemorrhage.

Theodore Franklin Pharr, Concord, N. C.; Bellevue Hospital Medical College, 1875; aged 69; a member of the Medical Society of the State of North Carolina; died in Charlotte, N. C., February 12.

Cyrus C. Harvey, Dundee, N. Y.; University of Buffalo, 1877; aged 72; a member of the Medical Society of the State of New York; a member of the Dundee board of education; died, February 9.

John Elmer Allaben ✠ Rockford, Ill.; University of Michigan, Ann Arbor, 1883; aged 62; surgeon to St. Anthony's Hospital, Rockford; died, February 9, from chronic interstitial nephritis.

George Gary Whitaker, Fulton, N. Y.; Albany (N. Y.) Medical College, 1865; aged 78; at one time city physician and health officer of Fulton; also a druggist; died, February 7.

William B. Putnam, Hoosick Falls, N. Y.; Homeopathic Hospital College, Cleveland, 1879; aged 65; died in Troy, N. Y., February 15, from heart disease.

Daniel Winfield Wheelwright, Woodward, Iowa, Rush Medical College, 1886; aged 59; a member of the Iowa State Medical Society; died, February 6.

Thomas Harwell Craig, Johnson's Grove, Tenn.; Memphis (Tenn.) Hospital Medical College, 1891; aged 55; died, February 8, following an operation.

Alfred Thomas Chisolm, Greensboro, Ga.; Leonard Medical School, Raleigh, N. C., 1908; a colored practitioner; died, January 30, from pneumonia.

Nathan Moody Dewees, Palacios, Texas; Eclectic Medical College, Cincinnati, 1892; aged 59; died, February 3, from carcinoma of the stomach.

James S. Lewis, Grand Ridge, Ill.; Cleveland Medical College, 1878; aged 74; a veteran of the Civil War; died, February 10, from pneumonia.

Charles Edwin Swasey, Lynbrook, N. Y.; College of Physicians and Surgeons in the City of New York, 1875; aged 73; died, February 8.

Michael B. Brennerman, Saxton, Pa.; Jefferson Medical College, 1870; aged 82; a veteran of the Civil War; died, January 28.

William Saphus Block, Port Byron, Ill.; University of Vermont, Burlington, 1886; aged 70; also a druggist; died, February 12.

Isaac E. Roberts, Philadelphia; University of Pennsylvania, Philadelphia, 1867; aged 80; died, February 15, from arteriosclerosis.

George V. Ess, Massillon, Ohio, Starling Medical College, Columbus, 1892; aged 65; died, February 7, from carcinoma.

Pierre Von der Smith ✠ Denver; Baltimore Medical College, 1888; aged 69; died, February 14, from pneumonia.

Francis L. Sanderson, Ramer, Ala.; University of Alabama, Mobile, 1901; aged 47; died, February 11.

Leo Ratner, New York; University of the City of New York, 1892; aged 59; died, February 18.

✠ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

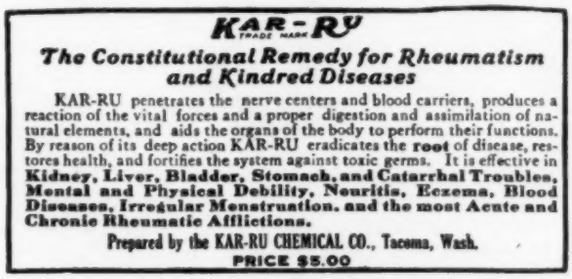
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED NOSTRUMS

White's Wonder Worker.—George W. Smith, who traded as the W. W. W. Medicine Co., Pickering, Mo., shipped in January, 1917, a quantity of "White's Wonder Worker" which the federal authorities declared was misbranded. When analyzed in the Bureau of Chemistry, the preparation was found to contain 8.2 per cent. of alcohol, with Epsom salts, ginger, quassia and caramel. It was falsely and fraudulently represented as an effective remedy for malaria, rheumatism, syphilis, all kidney and liver complaints, female disease and a number of other things. It was further misbranded in that the label represented that the product was a purely herbal extract, when, as a matter of fact it contained Epsom salts. Furthermore, it was labeled as containing 20 per cent. of alcohol when it actually contained only 8.2 per cent. of alcohol. In March, 1920, Smith pleaded guilty and was fined $20 and costs.—[*Notice of Judgment No. 8012; issued Jan. 5, 1921.*]

Kar-Ru and Gon-Nol.—The Kar-Ru Chemical Co., Tacoma, Wash., shipped in January, 1917, a quantity of "Kar-Ru" and "Gon-Nol" which were misbranded. Kar-Ru, when analyzed by the Bureau of Chemistry, was found to consist substantially of a mixture of sugar (sucrose), starch and charcoal. The proportions and weights of the different ingredients were variable. Kar-Ru was falsely and fraudulently represented as an effective remedy for rheumatism, kidney, liver, bladder and stomach troubles for mental and physical debility, blood diseases and irregular menstruation.

"Gon-Nol" was found by the Bureau of Chemistry to consist substantially of sugar (sucrose), starch and charcoal, the ingredients also in varying proportions and weights. It was fraudulently represented as an effective remedy for gonorrhea. The case came on for trial in July, 1918, before the court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The Constitutional Remedy for Rheumatism and Kindred Diseases
KAR-RU penetrates the nerve centers and blood carriers, produces a reaction of the vital forces and a proper digestion and assimilation of natural elements, and aids the organs of the body to perform their functions. By reason of its deep action KAR-RU eradicates the root of disease, restores health, and fortifies the system against toxic germs. It is effective in Kidney, Liver, Bladder, Stomach, and Catarrhal Troubles, Mental and Physical Debility, Neuritis, Eczema, Blood Diseases, Irregular Menstruation, and the most Acute and Chronic Rheumatic Afflictions.
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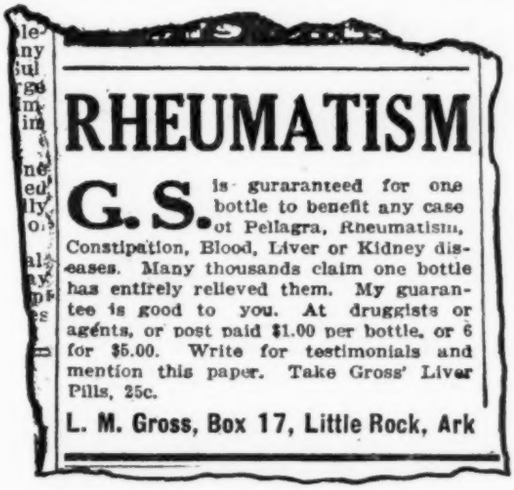
and a jury and the jury returned a verdict of guilty. The company then filed a motion in arrest of judgment which was denied by the court in October, 1918, and in December, 1918, the trial court entered judgment that the company should pay a fine of $100 on each count. In June, 1919, the company filed its petition for a writ of error and in September, 1919, argument was had on this writ before the Circuit Court of Appeals. In May, 1920, the matter came up for final disposition and the judgment and conviction by the lower court was affirmed. Later the company filed a petition for a rehearing before the Circuit Court of Appeals and in July, 1920, the petition was denied by the court.—[*Notice of Judgment No. 8021; issued Jan. 5, 1921.*]

O-Zo-Nol.—The Ozonol Chemical Co., Odessa, Mo., shipped in March, 1918, a quantity of "O-Zo-Nol" which was misbranded. The Bureau of Chemistry reported that analysis showed it to consist of an ointment composed essentially of small amounts of camphor, menthol, boric acid, beta-napthol and zinc oxid in a petrolatum base. It was falsely and fraudulently represented as an effective cure for eczema and all eruptions and diseases of the skin, nasal catarrh, sore throat, erysipelas, croup, piles and earache. In June, 1920, the company confessed judgment through its counsel and was fined $10 and costs.—[*Notice of Judgment No. 8028; issued Jan. 5, 1921.*]

G. S. Remedy.—A quantity of this product was shipped in August, 1919, to Cairo, Ill., having been consigned by L. M. Gross, Little Rock, Ark. Analysis of a sample by the Bureau of Chemistry showed "G. S. Remedy" to consist of an alcoholic solution containing unidentified vegetable extractives and a small amount of potassium iodid. It was falsely and fraudulently represented as an effective remedy in pellagra, rheumatism, indigestion, malaria, stomach, liver, kidney and


RHEUMATISM
G. S. is guraranteed for one bottle to benefit any case of Pellagra, Rheumatism, Constipation, Blood, Liver or Kidney diseases. Many thousands claim one bottle has entirely relieved them. My guarantee is good to you. At druggists or agents, or post paid $1.00 per bottle, or 6 for $5.00. Write for testimonials and mention this paper. Take Gross' Liver Pills, 25c.
L. M. Gross, Box 17, Little Rock, Ark

bladder diseases and syphilis. In January, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 8049; issued Jan. 5, 1921.*]

Gon-Nor.—The Occidental Medicine Co., Arecibo, P. R., shipped in November, 1918, a quantity of "Gon-Nor" which was declared misbranded. When analyzed by the Bureau of Chemistry the product was found to consist essentially of a watery solution containing acetates and sulphates of zinc and lead and extractives of catechu and wild cherry bark. It was falsely and fraudulently represented as an effective astringent in acute and chronic gonorrhea, urethritis, etc. In May, 1920, J. M. Blanco & Co., Inc., claimant, consented to a decree and judgment of condemnation and forfeiture was entered and the court ordered that the product be delivered to the claimant on payment of costs and the filing of a bond.—[*Notice of Judgment No. 8042; issued Jan. 5, 1921.*]

Methyloids.—A quantity of a product labeled in part "Methyloids Frederick Stearns & Co., Detroit, Mich.," was sold in September, 1919, at Ponce, P. R. The government charged that the product was misbranded. A sample analyzed by the Bureau of Chemistry was found to consist of capsules containing methylene blue, santal oil, copaiba balsam, a fixed oil with combined sulphur and oil of cinnamon. It was falsely and fraudulently represented as a successful treatment for gonorrhea and its complications. In November, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 8054; issued Jan. 4, 1921.*]

B-I-F Combination and B-I-F Capsules.—A quantity of "B-I-F Combination" and "B-I-F Capsules" was shipped in October, 1919, from Maryland to Pennsylvania having been consigned by the Hollander-Koshland Co., Baltimore, Md. When analyzed by the federal chemists, B-I-F Combination was found to consist of two preparations, an injection and an emulsion. The injection consisted essentially of a dilute watery solution of zinc sulphate, carbolic acid and glycerin while the emulsion consisted essentially of an alkaline mix-

ture of copaiba and oils of santal and peppermint. The B-I-F Capsules contained copaiba and oils of santal, turpentine and cinnamon. These products were both declared misbranded because they were fraudulently represented as an effective remedy for gonorrhea, gleet and disorders of a similar nature and origin. In November, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 8077; issued Jan. 4, 1921.*]

BRSCO.—In February, 1919, the Brsco Medicine Co., Nowata, Okla., shipped a quantity of "BRSCO." Analysis by the Bureau of Chemistry showed the stuff to consist essentially of a mixture of white mineral oil, turpentine, creosote with a watery solution containing gum acacia, sugar and a small amount of hypophosphites and alcohol. It was falsely and fraudulently represented as a treatment for tuberculosis, bronchitis, Spanish influenza, hay fever, asthma and ordinary coughs and colds. In September, 1919, a decree of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 8091; issued Jan. 4, 1921.*]

Sulpho-Saline Still Natural Mineral Water.—The Excelsior Springs Mineral Water & Bottling Company, Excelsior Springs, Mo., shipped in November, 1918, a quantity of "Sulpho-Saline Still Natural Mineral Water" which was misbranded. It was falsely and fraudulently represented as an effective cure for stomach troubles, headaches, jaundice and vertigo "when in truth and in fact, it was not." In May, 1920, the corporation confessed judgment through its counsel and was fined $10 and costs.—[*Notice of Judgment No. 8057; issued Jan. 4, 1921.*]

Correspondence

"ADMINISTRATION OF CARBON DIOXID AFTER ANESTHESIA AND OPERATION"

To the Editor:—In The Journal, Feb. 12, 1921, p. 437, Reimann, Bloom and Reimann, reporting an investigation on the administration of carbon dioxid after anesthesia, say that "the apparatus and technic used were the same as that described by Henderson, Haggard and Coburn" (The Journal, March 20, 1920, p. 783). This, however, is not correct, for the apparatus which is illustrated in Figure 1 of the paper of Reimann, Bloom and Reimann shows nothing more quantitative than a wash bottle through which the gas was bubbled. This arrangement is liable to be quite ineffective if used cautiously, and dangerous if used vigorously. With such apparatus one can never know what the patient is getting. Carbon dioxid is a powerful drug, and the control of dosage is of primary importance.

In our work, on the contrary, we used a device which, although simple in appearance, is the result of many years of experimentation and study in the Yale Physiological Laboratory. Our apparatus provides for accurate dosimetry —an essential both for efficiency and safety in this treatment.

It is noteworthy that Reimann, Bloom and Reimann found invariably (as we did) that carbon dioxid inhalation during the half hour after the termination of anesthesia markedly increases the volume of air breathed. Yet they express the opinion that "the administration of carbon dioxid did not materially hasten the recovery from the anesthetic." It would be interesting to know by what avenue Reimann, Bloom and Reimann believe ether to be eliminated from the body! Surely the sense of smell is sufficient to show that ether is ventilated out through the lungs; and it needs but little observation of postanesthetic conditions to see that in patients in whom the breathing remains subnormal, the elimination of ether is slow, and recovery is retarded.

They state that in their cases carbon dioxid exerted no constant effect in raising blood pressure, although they fail to give figures for the normal before anesthesia. In this observation they differ not only from us but from all other investigators. The blood pressure raising influence of carbon dioxid is one of the commonplaces of physiology. Evidently the amount of carbon dioxid which they administered was sufficient only to increase breathing, but not enough to increase the carbon dioxid in the blood to a blood pressure raising extent.

The explanation of their results is clearly that they confined their observations to patients who (as they admit) "were returned from the operating room in good condition with good color, warm skin, and a respiratory rate fairly regular." Evidently these patients had not suffered to any appreciable degree that depression of vitality which comes on usually only when anesthesia and operation are prolonged beyond an hour; then the skin loses its pinkness and arterial pressure falls (Bryant and Henderson, The Journal, July 3, 1915, p. 1). But it is to the relief of such depression that the carbon dioxid therapy is particularly applicable. The effects which Reimann, Bloom and Reimann report are those always obtained by small administrations of carbon dioxid to healthy persons who need no restoration.

The statements of Reimann, Bloom and Reimann regarding the blood alkali are of an essentially *a priori* character. They think that low blood alkali after anesthesia and operation is due to the formation of acids—the acidotic process—in which carbon dioxid inhalations are contraindicated. In fact, however, Henderson and Haggard have proved (*J. Biol. Chem.* **33**:345 [Feb.] 1918; **39**:163 [Aug.] 1919; **43**:3 [Aug.] 1920) that such is not its origin, but on the contrary that after anesthesia the blood alkali is simply withdrawn from use by lack of carbon dioxid. A restoration of the body's store of carbon dioxid is needed to recall the alkali to use.

The same general considerations apply to the application to this topic of the paper of Carter, quoted by Reimann, Bloom and Reimann in support of their objections to carbon dioxid therapy.

It is easy to answer such objections. But in science truth is not necessarily reached merely by argument. There are symptoms, signs and warnings in the carbon dioxid therapy which are to be grasped only by experience or demonstration. All that we ask is fair trial of our procedure and opportunities for demonstration. Otherwise the introduction and development of what we believe to be a measure of great value may be delayed for years.

Yandell Henderson, Ph.D.,
Howard W. Haggard, M.D.,
New Haven, Conn.
Raymond C. Coburn, M.D.,
New York.

THE NAMING OF ANIMAL PARASITES

To the Editor:—Cannot there be devised a way to simplify the naming of animal parasites? It might be possible to keep oneself fairly well informed regarding them were each, when discovered, given its correct zoological name, and this name only used by all subsequent writers. As things now are, a parasite is given a name, this is revised by one or more later investigators, and then each revision is corrected by authorities or writers until a formidable list of names makes one who is not an expert zoologist feel helpless. Teachers are confused, students bewildered.

These remarks have been precipitated at this time by my recent attempt to give a brief account of the *Distomata*, or flukes (I notice that the word "fluke" does not appear in the index of the latest edition of Castellani and Chalmers'

Tropical Medicine). Mention of this splendid book recalls that it contains a number of instances of renaming parasites that do not add to the clearness of medical literature; the trypanosomes for instance. When those authors designate the trypanosomes of warm-blooded animals as *Trypocastellanelleae,* one genus as *Castellanella* Chalmers, 1918, and one species as *Castellanella castellanii,* one may be pardoned for wondering what is the limit to the gentle art (or pastime) of naming parasites. Further, one finds in Dobell's monograph on "The Amoebae Living in Man" a list of thirty-three names of the ameba causing dysentery (I dodge naming it here). He uses five pages in showing why one of these names is correct. Others, of course, can fill more pages to prove that he is wrong. When I was a student I learned that the broad tapeworm was *Bothriocephalus latus,* a revised name given in 1819, and a little later in my course that it was *Dibothriocephalus latus,* the original name given in 1748. Both are now in current literature, and in a recent article a writer prefers the 1858 vintage of *Diphyllobothrium latum.* Which shall it be? The foregoing are but a few of the many instances of multiple naming that could be cited.

Possibly I should be ashamed of not knowing, and being willing to teach, all the multitudinous names of all the parasites. But I am not. Instead, I am rebellious because there are now in use so many to perplex teacher and pupil. Students should not be compelled to spend so much time in learning the names—original, revised, corrected, amended, honorary—of parasites, that they have none left in which to learn how these parasites get into the human body and what they do to it after they arrive.

What can be done? Why not establish an international clearing house, a small committee of zoologists, whose first duty would be to choose *one* name for each known parasite. Although no writer could be forced to use them, I believe there would be practically universal acceptance of such names, for the advantage of this simplification must be apparent to every person. Secondly, when a new parasite was discovered its finder could submit his description (or a sample) and his proposed name to this committee before publication. In this way the parasite would be properly classified and the possessor of a permanent name when presented to the profession; the present pernicious naming and especially renaming would be avoided. Priority of discovery would be assured, just as at present. And exactly the same method could be employed with bacteria, spirillae, etc. Let some of the efforts of our learned men be toward simplifying instead of complicating medical literature.

This idea may be Utopian; if any one has a different suggestion, let us hear it. I am one of many who would be glad to have THE JOURNAL support some plan for bettering present conditions.

A. G. ELLIS, M.D., Bangkok, Siam.

"NECROPSIES AND MEDICAL PROGRESS"

To the Editor:—Referring to Dr. Ashhurst's letter and your editorial (THE JOURNAL, February 19), on the subject of necropsy records in the hospitals, I take the liberty of addressing you concerning some of the Chicago hospital records on account of a slight inaccuracy in your data. In the year 1920 at the Cook County Hospital there were 3,267 deaths, after subtracting stillbirths. Of this number 875 were coroner's cases; in the remainder there were performed 304 additional necropsies. These figures are taken from the pathologist's report. Therefore, 12.7 per cent. of the bodies of patients dying in the Cook County Hospital were examined postmortem by permission. The total necropsy percentage for the year equaled 36.5 per cent.

KELLOGG SPEED, M.D., Chicago.

RELATION OF THYROID TO MENSTRUATION

To the Editor:—The following statement by Dr. William Engelbach appears in the last issue of *Medical Clinics of North America.* In a clinic on "Endocrine Amenorrhea," he says:

> The hypothyroid girl menstruates at a much earlier age than the normal. The speaker has noted that in a series of cretins in which there was a complete insufficiency of the thyroid gland, adolescence occurred from the age of 9 to 11 years. . . . The thyroid secretion is an inhibitory hormone to the gonads. When this substance is withdrawn, more or less completely in the hypothyroid, menses occur as described above. Whereas, when an excessive thyroid secretion is present in the body, the inhibition is so great as not only to delay the age of occurrence of the first period, but to suppress the normal menstrual act and produce the short, scanty and irregular painful period present in hyperthyroidism.

Yet Osborne, in the *New York Medical Journal,* September, 1918, makes the following statement, with which many other authorities seem to agree:

> Menstruation cannot possibly occur without the activity of the thyroid. Too much thyroid secretion may cause profuse or too frequent menstruation. . . . In female cretins, the genital organs may develop, but they do not function.

Is it not strange that two such contradictory statements should be made in these times about the one endocrine gland concerning which we pride ourselves that we have a fairly complete understanding?

One of these views must be incorrect. Will you kindly give me the latest commonly accepted view regarding the relation of the thyroid to menstrual disorders? I am sure this would interest many.

S. A. LEVINSOHN, M.D., Brooklyn.

[A copy of the foregoing communication was sent to each of the authors mentioned. DR. WILLIAM ENGELBACH, St. Louis, replies:]

I can readily agree that the views in literature on this subject differ materially. In fact, this is true of the hormonic functions of the ductless glands other than the thyroid. Much more difference of opinion prevails regarding the interaction of the glands of internal secretion on one another than on the functions of organs of other systems. Much more literature could be quoted stating that the thyroid secretion is an accelerating, rather than an inhibitory hormone to the ovaries and the act of menstruation. Possibly it is the existence of this prevailing idea that produces the requoting of this stimulating effect of the thyroid secretion on the development and function of the gonads.

It has occurred to us that those cases of hypothyroidism associated with infantile genitalia, as quoted by Dr. Osborne, might possibly have been polyglandular cases in which other glands were involved. This deduction is made from observations on polyglandular disorders, consisting of insufficiency, for instance, of the thyroid, pituitary and gonads, in which this anatomic aplasia of the genital tract is present.

Some additional references to the deduction that the thyroid hormone is an inhibitory one to the ovaries are made from clinical observations in which it has been noted that: (1) cretins have an unusually early adolescence and an early overdevelopment of both the primary and secondary sex organs, and a profuse and prolonged menstrual flow, without dysmenorrhea; (2) hyperthyroid girls have the opposite development of the secondary sexual characteristics, a late adolescence, and a tendency to scanty, imperfect menses, associated with dysmenorrhea; (3) the hypothyroid woman has her menopause very late in life (after the age of 45), and usually gives a history of rather profuse, prolonged menses, free from discomforting local or constitutional symptoms, antedating the menopause; (4) thyroid therapy in both the early and the late hypothyroid has a marked tendency to decrease the amount of flow and shorten its duration; (5) the youthful or early adult hyperthyroid, following operation in which

the thyroid secretion is greatly diminished, has a tendency to return to the normal with regard to the amount, duration and painfulness of the menses; (6) in a few cases in which the thyroid gland was removed entirely, which had been accompanied by metrorrhagia, this metrorrhagia was entirely relieved by thyroid medication.

[Dr. Oliver T. Osborne, New Haven, Conn., writes:]

I myself have never known a decidedly hypothyroid young girl to menstruate, and certainly in such cases I have never seen precocious menstruation. Of course it may be possible for a hypothyroid girl to menstruate when there are disturbances and abnormalities of other endocrine glands, but I reassert the clinical fact as I find it that hypothyroidism at any age interferes with or actually inhibits menstruation. It frequently occurs that the adult woman has amenorrhea with other symptoms of hypothyroidism, such as dry skin, increase in deposits of fat, sleepiness and slow pulse, all of which conditions are improved or cured by the administration of thyroid extract; and as soon as the menstruation becomes regular and sufficient, the other hypothyroid symptoms disappear. Sometimes the coincident administration of iodin is necessary; at other times iodin alone to stimulate the thyroid gland is sufficient to start menstruation and cause the symptoms of hypothyroidism to disappear. On the other hand, hyperthyroidism often causes profuse and too frequent menstruation.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

IMPOSSIBILITY OF RACE IDENTIFICATION BY BLOOD TESTS

To the Editor:—Will you kindly furnish me with references to recent work on the identification of race by the precipitin blood method, with especial reference to the quantitative results possible in mixed races. I wish to find out, for example, how little negro blood reaction has been or can be shown in mixed races. D. M. L., Charleston, W. Va.

To the Editor:—A patient of mine has asked me two questions which I should like to have your help in answering if possible: 1. She has heard rumors to the effect that there is a strain of colored blood in her veins, and she has asked me whether there is any way of determining by means of a blood test whether or not this is true. 2. She also wants to know whether in case there is a slight strain of colored blood, there is a possibility of its resulting in the birth of a colored child in case she should be married. As she is contemplating matrimony, she is naturally very much exercised by this. I would appreciate very much your answering these questions if you can or, if not, your informing me where I can look the matter up in order to give her a satisfactory answer to these two questions.

S. J. Repplier, M.D., Philadelphia.

Answer.—1. There is no way at present known to determine by blood test whether or not a person has negro blood. It is not possible to distinguish between human races by precipitin tests. Whether the study of races from the point of view of iso-agglutination, as urged by Hirschfeld, would yield results of practical value in the identification of race mixture in a person is, of course, highly doubtful. Those interested should consult the article by Hektoen, "The Precipitin Test for Blood," The Journal, May 4, 1918, p. 1273.

2. If negro blood is present in either parent, a child may have negro features in greater or less degree.

SODIUM LACTATE IN DIABETES—STATUS OF COMPLEMENT FIXATION TEST IN TUBERCULOSIS

To the Editor:—1. In The Journal, Feb. 12, 1921, p. 484, is a statement concerning the use of sodium lactate in diabetes. I don't quite understand how it is oxidized into sodium bicarbonate, thus becoming effective as an antidote to acetone poisoning. 2. Some years ago, I read some papers concerning the complement fixation test as a method in studying immunity in tuberculosis. What is the present status or value of this test? Samuel Ginsburg, M.D., Buffalo.

Answer.—1. Salts of certain carboxylic acids, such as sodium acetate, citrate, lactate or malate, are oxidized in the body to carbonates, or as they finally exist in the main in the blood stream, to bicarbonates (somewhat similarly to the manner in which glucose is "burned" in the body to carbon dioxid and water). Some of the carbon dioxid finds its exit through the lungs, leaving the associated base, generally sodium or potassium, with the weak acid, carbonic acid. Thus, just as if sodium bicarbonate had been administered, the urine of a normal person may be made alkaline with sodium citrate or lactate.

2. The complement fixation test in tuberculosis must be considered as still in the experimental stage. Some writers are extremely enthusiastic, while others are rather doubtful as to the value of the test. As compared with the Wassermann test for syphilis, it cannot be considered even fairly efficient. Following is a list of references from the Quarterly Cumulative Index:

Stivelman, B. P.: Tuberculosis Complement Fixation Test, Report of Seven Hundred Cases, *J. Lab. & Clin. Med.* **5:** 453 (April) 1920.
Watkins, W. W., and Boynton, C. N.: Complement Fixation Reaction in Tuberculosis, Reporting Six Thousand Five Hundred Reactions, The Journal, Oct. 2, 1920, p. 933.
Upham, R., and Blaivas, A. J.: Value of Complement Fixation Test in Tuberculosis, *J. Lab. & Clin. Med.* **5:** 784 (Sept.) 1920.
Moursund, W. H.: Serodiagnosis of Tuberculosis, *J. Infect. Dis.* **26:** 85 (Jan.) 1920.
Von Wedel, H. O.: Serodiagnosis of Tuberculosis, *J. Immunol.* **5:** 159 (March) 1920.
Letulle, R.: The Calmette-Massol Technic in Serology, *Presse méd.* **28:** 588 (Aug. 25) 1920; abstr. The Journal, Oct. 9, 1920, p. 1029.
Buddy, E. P.: Clinical Value of Complement Fixation Test for Tuberculosis, *J. Missouri M. A.* **17:** 145 (April) 1920.
Rogers, J. B.: Complement Fixation in Tuberculosis and a Comparison of the Wassermann and Hecht-Weinberg, Gradwohl Systems, *J. Infect. Dis.* **27:** 101 (Aug.) 1920.
Punch, A. L.: Complement Fixation Test in Pulmonary Tuberculosis: Its Use as a Means of Diagnosis, *Lancet* **2:** 647 (Sept. 25) 1920.
Pritchard, J. S., and Roderick, C. E.: Complement Fixation Test for Tuberculosis, The Journal, Dec. 20, 1919, p. 1879.
Stoel, H. F., and Neuman, L.: Complement Fixation Test in Diagnosis of Tuberculosis, The Journal, April 12, 1919, p. 1043.
Young, H. C., and Givler, J. P.: Comparison of Certain Antigens Used in Complement Fixation Tests in Pulmonary Tuberculosis, *Am. Rev. Tuberc.* **3:** 476 (Oct.) 1919.
Lewis, P. A.: Complement Fixation Reaction as Applied to Tuberculosis, *Am. Rev. Tuberc.* **3:** 129 (May) 1919.
Wang, C. Y., and Crocket, J.: Diagnosis of Tuberculosis, Complement Deviation, *Brit. M. J.* **2:** 7 (July 5) 1919.

PRIMARY NEOPLASMS OF THE PLEURA

To the Editor:—Can any of your departments furnish me with references to the literature relating to primary carcinoma of the pleura? We have searched the current literature and can find none. We would appreciate any help you can give.

E. A. Wood, M.D., and A. L. Walter, M.D., Sedalia, Mo.

Answer.—DuBray, E. S., and Rosson, F. B.: Primary Mesothelioma of the Pleura, *Arch. Int. Med.* **26:** 715 (Dec.) 1920.
Vallee, A.: Case of Endothelioma of Pleura with Multiple Metastasis, *Canad. M. A. J.* **10:** 268 (March) 1920.
Roman, R.: Primary Sarcoma of Pleura, *Hygiea* **81:** 174 (Feb. 28) 1919; abstr. The Journal, May 3, 1919, p. 1338.
Packard, M.: Primary Malignant Neoplasms of Lung and Pleura, *New York State J. M.* **18:** 472 (Dec.) 1918.
Wieringa, J. H.: Cancer of Pleura, *Nederlandsch Tijdschr. v. Geneesk.* **1:** 717 (March 10) 1917.
Keilty, R. A.: Primary Endothelioma of Pleura, *Am. J. M. Sc.* **153:** 888 (June) 1917.
McDonnell, P. J., and Maxwell, E. S.: Endothelioma of the Pleura, The Journal, Jan. 17, 1920, p. 168.
Kornitzer, E.: Myoma of the Pleura, *Berlin. klin. Wchnschr.* **56:** 1039 (Nov. 3) 1919; abstr. The Journal, March 13, 1920, p. 771.
Von Meyenburg, H.: Carcinomatous Lymphangitis in Pleura and Lung, *Cor.-Bl. f. schweiz. Aerzte.* **49:** 1668 (Oct. 30) 1919; abstr. The Journal, Dec. 20, 1919, p. 1906.
Bernstein, H. S.: Malignant Disease of Pleura, *Albany M. Ann.*, February, 1913; abstr. The Journal, March 1, 1913, p. 694.
Guyot, J., and Parcelier, A.: Primary Tumors of Pleura and Lung, *Rev. de chir.*, May, 1912; abstr. The Journal, July 6, 1912, p. 73.
Fraenkel, A.: Tumors in Lungs and Pleura, *Deutsch. med. Wchnschr.*, March 23, 1911; abstr. The Journal, April 29, 1911, p. 1303.

DOSAGE OF ANTITYPHOID VACCINE AS NONSPECIFIC PROTEIN

To the Editor:—We of the rank and file owe The Journal a debt of gratitude for the excellent series on biologic therapy. The articles on foreign protein therapy were particularly welcome, but I felt rather disappointed to find in none of these any expression of opinion on dosages of the proteins employed in the various conditions; probably many of your readers have remarked the omission and would appreciate a few words on this important phase of the subject.

Carl Schumann, M.D., Utica, N. Y.

Answer.—The dosage of nonspecific proteins depends entirely on the substance used. Frequently if antityphoid vaccine or a particular brand of antityphoid vaccine is used, a dose of 50,000,000 is sufficient to give a chill; but in some cases 75,000,000 may be required. It is probably safe to start with a dosage of 10,000,000 and then work up or down according to the response. The method is not to be considered a safe one in the hands of the inexperienced.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 5-6. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, April 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 12. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

IDAHO: Boise, April 5. Director, Mr. Paul Davis, Boise.

MINNESOTA: Minneapolis, April 5-7. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.

MONTANA: Helena, April 12. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW MEXICO: Santa Fe, April 11-12. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, April 12-13. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, April 5. Sec., Dr. Manuel Quevedo Baez, San Juan.

RHODE ISLAND: Providence, April 7-8. Sec., Dr. Byron U. Richards, State House, Providence.

UTAH: Salt Lake City, April 4-5. Sec., Dr. C. L. Olsen, 932 South 5th East St., Salt Lake City.

WEST VIRGINIA: Charleston, April 13. Health Commissioner, Dr. R. T. Davis, Charleston.

Arkansas Eclectic November Examination

Dr. Claude E. Laws, secretary, Arkansas Eclectic Board of Medical Examiners, reports the written examination held at Little Rock, Nov. 9-10, 1920. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
American Medical College		(1893)	1
Eclectic Med. Univ., Kansas City		(1906) 1, (1919) 1, (1920) 3	1
Kansas City College of Medicine and Surgery		(1920) 2	2

Iowa November Reciprocity Examination

Dr. Guilford H. Sumner, secretary, Iowa State Board of Medical Examiners, reports eleven candidates licensed by reciprocity at the meeting held at Iowa City, Nov. 9, 1920. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1917)	Illinois
Hahnemann Medical College and Hospital, Chicago		(1917)	Illinois
Northwestern University		(1916)	Illinois
Rush Medical College		(1915)	Illinois
University of Illinois		(1918)	Illinois
Marion-Sims-Beaumont Medical College		(1903)	Missouri
St. Louis University School of Medicine		(1919)	Missouri
John A. Creighton Medical College		(1918) (1919)	Nebraska
University of Nebraska College of Medicine		(1916)	Nebraska
Jefferson Medical College		(1914)	California

Nebraska November Examination

Mr. H. H. Antles, secretary, Department of Public Welfare of the Nebraska State Department of Health, reports the oral and written examination held at Lincoln, Nov. 10-12, 1920. The examination covered 10 subjects and included 75 questions. An average of 70 per cent. was required to pass. Three candidates were examined, all of whom passed. Twenty-two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago		(1903)	84.5
John A. Creighton Medical College		(1920)	97.5
Temple University		(1920)	82.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado		(1897)	Kansas
Bennett Medical College		(1915)	Illinois
Chicago College of Medicine and Surgery		(1917)	Wyoming
Hahnemann Medical College, Chicago		(1910)	Texas
Hering Medical College		(1904)	Kansas
Loyola University		(1918)	Illinois
Northwestern University		(1920)	Illinois
University of Kansas School of Medicine		(1918)	Kansas
University of Louisville		(1905) (1907)	Kansas
Harvard University		(1918)	Mass.
Barnes Medical College		(1898)	Missouri
Ensworth Medical College		(1908)	Kansas
University Medical College of Kansas City		(1910) (1899)	Iowa Missouri
Eclectic Medical College of the City of New York		(1906)	Iowa
University of Cincinnati		(1919)	Ohio
Jefferson Medical College		(1914)	Penna.
Chattanooga Medical College		(1903)	Georgia, (1907) Oklahoma
Meharry Medical College		(1913)	Kansas, (1918) Tennessee

Nevada November Examination

Dr. Simeon L. Lee, secretary, Nevada State Board of Medical Examiners, reports the written examination held at Carson City, Nov. 1, 1920. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. Nine candidates, including one osteopath, were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons of San Francisco		(1918)	81.3
University of Louisville		(1907)	82.9
University of Maryland		(1918)	86.6
Kansas City University of Physicians and Surgeons		(1919)	81.8
St. Louis College of Physicians and Surgeons		(1920)	78.1
Columbia University		(1898)	85.7
University of Toronto		(1911)	89

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, San Francisco		(1914)	California
University of California		(1917) (1918)	California
Harvey Medical College		(1903)	Illinois
University Medical College of Kansas City		(1903)	Nebraska
Washington University		(1919)	Utah
University and Bellevue Hospital Medical College		(1901)	Oklahoma
University of the South Medical Department		(1905)	Penna.

New Mexico October Examination

Dr. R. E. McBride, secretary, New Mexico State Board of Medical Examiners, reports that 12 candidates were licensed on diploma, and 1 candidate was licensed by reciprocity, at the meeting held at Santa Fe, Oct. 11-12, 1920. The following colleges were represented:

College	LICENSED ON DIPLOMA	Year Grad.
Northwestern University		(1897)
College of Physicians and Surgeons, Chicago		(1901)
Tulane University		(1908)
Tufts College Medical School		(1901)
St. Louis College of Physicians and Surgeons		(1892)
Washington University Medical School, St. Louis		(1903)
University of Buffalo		(1902)
Columbia University		(1903), (1918)
Vanderbilt University		(1916)
University of Virginia		(1911)
McGill University		(1885)

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Louisville Medical College		(1904)	Arkansas

South Carolina November Examination

Dr. A. Earle Boozer, secretary, South Carolina State Board of Medical Examiners, reports the oral, written and practical examination held at Columbia, Nov. 9-11, 1920. The examination covered 17 subjects and included 85 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 9 passed and 5, including 1 osteopath and 1 chiropractor, failed. Eight candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University		(1917)	82.6
Emory University		(1920)	86
University of Georgia		(1906)	75.2
University of Maryland		(1920)	93, 96.1
Harvard University		(1918)	91.9
New York Medical College and Hospital for Women		(1911)	84.8
University of Oklahoma		(1920)	80.3
Jefferson Medical College		(1918)	87.9
	FAILED		
Boston University		(1920)	75.9
Meharry Medical College		(1907)	53
University of Nashville		(1909)	81.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta College of Physicians and Surgeons		(1912)	Georgia
Atlanta Medical College		(1914, 2)	Georgia
Emory University		(1916) (1917)	Georgia
St. Louis University School of Medicine		(1918)	Missouri
University of Pennsylvania		(1914)	Penna.
Medical College of Virginia		(1919)	N. Carolina

Book Notices

Malaria at Home and Abroad. By S. P. James, M.D., D.P.H., Adviser on Malaria to the Ministry of Health, England. Cloth. Price, $5.50. Pp. 234, with 105 illustrations. New York: William Wood & Co., 1920.

This book is "intended to be an elementary guide to medical men and administrators who may have to deal with malaria at home or abroad during peace or war." It contains a well organized account of the more practical present day methods of recognition, treatment and prevention of malaria in countries where the disease is prevalent, as well as in areas in which sporadic outbreaks occur. The first two chapters deal with the description and life history of the malarial parasite and the factors relating to the manner of infection and spread of the disease. The source of malarial infection is always a human being with sexually differentiated forms of the parasite in the peripheral blood, and these sexual forms, through the medium of the mosquito alone, are capable of spreading the disease. Persons suffering with an attack of fever, and "healthy malaria carriers" are the chief sources of danger, though circumstances relating to the actual parasites (gametocytes) are important. Among the recognized factors discussed in the spread and maintenance of malaria in a community are the species of mosquitoes; their habits; their peculiarities of resistance to temperature, humidity and seasonal variations; susceptibility and relative immunity of individuals, and the social and economic conditions. The methods of study and identification of the parasite in the human and intermediate hosts and the life history of the mosquito are considered in some detail, a thorough knowledge of these factors being necessary to establish a diagnosis of the type of infection and the prevention of further spread. In order to emphasize the necessity and value of field work in the study of the mode of origin, spread and plan of prevention of malaria, the author gives the details of malarial surveys in England and in the tropics, and shows the important bearing of the returned soldiers to development of small outbreaks in several communities. Four chapters are given to the symptomatology, pathology and diagnosis of malaria. The general clinical course is carefully outlined, and complications, such as pernicious malaria and blackwater fever, are included. In discussing treatment, emphasis is laid on the fact that while quinin is effective in the treatment of the attack, its use does not insure the complete eradication of the parasites. The time of administration of the drug is important, quinin being effective only in the stage of sporulation of the parasites. Given by mouth, the effect of the drug begins in less than half an hour after administration and is active for not more than six hours, factors to be kept in mind in combating the infection. The last two chapters deal with the "prevention" and "eradication" of malaria, discussing quinin prophylaxis, segregation of the healthy, elimination of malaria-carrying mosquitoes, protection from bites of mosquitoes, and rules for huts, wards and houses in malaria-infected communities. The book is an excellent summary of the present day knowledge of malaria. It is written in an interesting fashion, is well illustrated, and should prove of value to all interested in the study of malaria, its recognition and its prevention.

Anatomie des menschlichen Gehirns und Rückenmarks aus myelogenetischer Grundlage. Von Paul Flechsig. Paper. Price, $7. Pp. 121, with 33 illustrations. Leipsic: Georg Thieme, 1920.

With this, the first of three volumes on the anatomy of the human brain and cord on a myelogenetic basis, Flechsig redeems a promise made in 1896 in "Gehirn und Seele." In this volume Flechsig makes a general survey of his material, and again emphasizes the importance of myelogenesis as a method of research of the anatomy of the brain. He expresses the hope that by the representation he may prove the futility of the assertion of some authors that myelogenetic differentiation is useless in anatomy because of the inexactness of the pictures. The second volume, it is said, will deal with the microscopic studies of fiber formation up to the period of birth, and the third volume with fiber formation from the time of birth until the macroscopic consummation of the projection system, association system in the cortex and white matter of the cerebrum. The first volume consists of two parts, the first of which is devoted to a consideration of myelogenesis as a method of investigation, myelogenic cortical fields, and myelogenesis and pathology, and the second to a survey of the material, with illustrations and a chronological bibliography. Flechsig points out the existence of projection centers which occupy only a small part of the hemispheres and the larger area of association centers and embryonic intermediate centers. In the light of cyto-architectural studies of the brain, which have rendered some of Flechsig's views untenable, the present publication will be viewed with great interest. The illustrations are beautiful reproductions of wonderfully stained material from a number of fetuses, children, one adult brain and the brains of three dogs.

Phenomena of Materialisation. A Contribution to the Investigation of Mediumistic Teleplastics. By Baron von Schrenck Notzing. Translated by E. E. Fournier d'Albe, D.Sc. Cloth. Price, $15 net. Pp. 340, with 225 illustrations. New York: E. P. Dutton & Co., 1920.

Medical men will naturally look with alarm and amazement at this formidable volume with its hundreds of illustrations, setting forth doctrines subversive of approved scientific ideas. Yet it is written by a medical man who asks for no consideration beyond the principles of science, and is translated by one versed in scientific literature. The story relates to a medium who produces bits of tissue and strange faces and forms under conditions apparently precluding fraud. On this basis is elaborated a theory of "ectoplasm," which is the alleged substance out of which these apparitions are supposed to be formed. The volume represents the culmination of years of investigation, but to the critical mind is only an elaborate example of the false conclusions following from a single false step. There is much evidence that the medium is a ruminant who swallows bits of gauze and brings them up again, while the rest of the phenomena are doubtless equally unrelated to any necessity for changing the suppositions of science. The volume will take its place as a remarkable example of the conclusions arrived at by scientifically trained men, yet in no different a manner than the crudest kind of prepossession. What is amazing is that a work of this kind should appear under such serious auspices with such ambitious intent in the twentieth century.

Hygiene of Communicable Diseases. A Handbook for Sanitarians, Medical Officers of the Army and Navy, and General Practitioners. By Francis M. Munson, M.D., Lecturer on Hygiene, School of Medicine, Georgetown University. Cloth. Price, $5.50 net. Pp. 793, with illustrations. New York: Paul B. Hoeber, 1920.

Current information in regard to the epidemiology and management of communicable diseases is here presented in concise form. The object seems to be to furnish a reliable guide to medical officers and sanitarians engaged in practical work. In general, the directions and teachings are reliable and clearly set forth; in the chapters on infection and immunity, however, occur statements that are open to criticism, e. g., that normal opsonins are nonspecific and that the opsonins of immune serum cannot act without complement—erroneous statements taken from other books; the cause of influenza is given without any qualifications whatever as *B. influenzae;* and the description of hospitals for communicable diseases leaves much to be desired. Nevertheless, the book may be recommended as a useful guide in everyday practical matters.

Physiological Chemistry. A Text-Book and Manual for Students. By Albert P. Mathews, Ph.D., Professor of Biochemistry, The University of Cincinnati. Third edition. Cloth. Price, $6. Pp. 1154, with 109 illustrations. New York: William Wood and Company, 1920.

An extended review of the first edition of this comprehensive book was published in The Journal in 1915. Since that time great advances have been made in biochemistry, particularly in precise analytic methods for the examination of the blood and cerebrospinal fluid. Our knowledge of the vitamins, too, while still lamentably imperfect, has been yearly broadened during the last half decade. In this edition these subjects have received the attention they deserve. The chemistry of the carbohydrates, fats and proteins and the physical chemistry

of the cell are discussed very fully, since a thorough knowledge of these subjects is essential to a comprehension of physiology and pathology. Physicians desiring a reference work on physiologic chemistry embodying the latest information sufficiently condensed for practical purposes will find this book valuable.

Medicolegal

Privilege for Patient, Not Physician—Communications of Parents

(Cromeenes v. Sovereign Camp of Woodmen of the World (Mo.), 224 S. W. R. 15)

The Springfield (Mo.) Court of Appeals reverses a judgment obtained by the plaintiff, as beneficiary in a certificate of insurance issued by the defendant, on account of erroneous rulings with regard to privileged communications. It became a vital question in the case whether or not the insured had had gonorrhea or syphilis. In his application for the insurance, he had waived for himself and beneficiaries the privileges and benefits of the law disqualifying any physician from testifying concerning any information obtained by him in his professional capacity. Nevertheless, there was a ruling on the competency of a physician to testify, based on the theory that he could claim the information as privileged under the statute, as well as the patient. But the court holds that there was error in that regard, and that the evidence of the physician as to the information gained while treating the insured was, in view of the waiver in the application, competent, and the physician could not claim the privilege when waived by the patient.

The court holds also that if the insured told a physician, when treating his baby's eyes, that he had had gonorrhea, there was no reason for excluding such evidence. That was not information that came to the physician in his professional capacity while treating the insured. So far as the court was advised, that proffered evidence was no more within the statute than had the insured made the statement that he had had gonorrhea, to a lay witness. But as to the competency of offered evidence tending to show that the baby was suffering from gonorrheal affection, the court thinks that the bar of the statute prevailed. The privilege inures to the patient. The baby was certainly the patient, and as to whether it was suffering from a gonorrheal affection or infection should remain within the veil of secrecy authorized by the statute.

Improper Questions About Intention to Quit Case

(Marshall v. Brown (Mo.), 224 S. W. R. 13)

The Springfield (Mo.) Court of Appeals says that this action was brought by a physician for services rendered to one Rowe, who lived on the defendant's place, about 10 miles from the plaintiff's office. The plaintiff found Rowe in a serious condition, suffering from blood poisoning, and also found that another physician had been in the case. He told Rowe on the first treatment that unless he could secure him in a fee he could not continue the treatment, but would donate that visit. Rowe had some money, and told him to come on; that he thought he could get help so that the fee would be secured. The action against defendant Brown was based on a contract made between him and the plaintiff. The point of dispute was only as to what the defendant was to pay in the event that Rowe got well. The plaintiff testified that the defendant agreed to pay the full amount of his bill if Rowe recovered, but, should Rowe die, only one-half of his fee for services. The defendant testified that the special contract was that he would pay the plaintiff one half of his bill if Rowe died, and that in the event that Rowe lived he would then pay the full amount out of any wages coming from him to Rowe. Rowe got well, quit working for the defendant, and left. On the trial of the case, the plaintiff was asked, on cross-examination, whether Rowe was not badly in need of medical attention when the plaintiff first visited him, and could not have lived very long in that condition without medical attention. After several other questions along that line, as to the plaintiff's having asked Rowe how much money he had, and as to the people raising funds for Rowe, the plaintiff was asked to tell the jury whether or not, with the conditions as he found them, he had intended to quit the case if the defendant had not made any such promise as he did. That was objected to for the reason that this was an action on a contract and it could not be changed by some prior intention, and for the further reason that the plaintiff had given the facts in the case, and stated that he had made the different visits because it was promised from the start that this man would pay this bill, or it would be secured. The objection was overruled, and the question was asked: "After you made those treatments and received pay for it, and the man was still desperately sick, I will ask whether or not you would have left him in that condition without medical attention and refused to treat him further?" which was answered, "Yes, sir; because that's what he agreed to do at the beginning, and another doctor was in the case." The trial resulted in a verdict and judgment for the defendant, which judgment is reversed, on account of error in the cross-examination. The questions calling for the intention of the plaintiff as to whether or not he would have quit treating Rowe before this contract was made with the defendant were incompetent for any purpose. He had a right to quit the case by giving the proper notice. The questions were clearly for the purpose of discrediting and prejudicing the plaintiff in the eyes of the jury. Such testimony might not amount to reversible error in a case wherein the determination of the issue did not depend solely on the testimony of the plaintiff and the defendant. Whether the plaintiff had intended to quit the case, as the law provided that he might do, by exercising the proper care, in no way tended to prove whether he had the contract with the defendant that he was testifying to.

One Physician Not Allowed to Testify to Confidence in Another

(Sate v. Bramlett (S. C.), 103 S. E. R. 755)

The Supreme Court of South Carolina holds that, in this homicide case in which one of the defenses was insanity, there was no error, when one physician had testified as an expert, in excluding the testimony of another physician as to his confidence in the first one. Justice Hydrick, voicing the opinion of the majority of the court on that point, says that the second physician testified, without objection, that the first one was one of the best alienists in the country. He was then asked as to his confidence in him. The answer was properly excluded. It was for the jury to decide what confidence or weight his testimony should have, without regard to the second physician's opinion as to the weight it should have or the weight he would give it, in the absence of any attack on the first physician's testimony. On the other hand, Justice Fraser says that he knows of no reason why the first physician's reputation as an expert in mental diseases might not be sustained in the same way that his reputation for veracity could have been sustained by other witnesses, had his testimony depended primarily on his veracity. The first physician did not live near the place of trial, and was unknown to the jury, while the other physician did live near the place of trial, and presumably was known by the jury.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Montgomery, April 21.
American Association of Anatomists, Philadelphia, March 24-26.
American Association of Pathologists and Bacteriologists, Cleveland, March 25-26.
Arizona Medical Association, Tucson, April 15-16.
Louisiana State Medical Society, New Orleans, April 19-21.
Midwinter Conference under the auspices of the Council on Health and Public Instruction and the Council on Medical Education and Hospitals of the American Medical Association, Congress Hotel, Chicago, March 7-10.
South Carolina Medical Association, Columbia, April 19-20.
Tennessee State Medical Association, Nashville, April 12-14.
Western Electro-Therapeutic Association, Kansas City, Mo., April 21-23.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

February, 1921 **21**, No. 2

*Effect of Injection of Nonspecific Protein on Diphtheria Virulence Tests in Guinea-Pigs. H. A. Calhoun, Iowa City, Ia.—p. 107.

Experiments to Determine Persistence of Extraneous Bacteria in Gastro-Intestinal Tract of Guinea-Pigs as Influenced by Diet. A. G. Mitchell and P. Lewis, Philadelphia.—p. 129.

*Analysis of Two Hundred and Fifty Ward Cases of Acute Endocarditis in Children. H. P. Ledford, Boston.—p. 139.

*Studies in Spasmophilia. III. Blood Calcium and Calcium Therapy in Older Children with Thiemich's Sign. L. Von Meysenbug, Minneapolis.—p. 150.

Rumination in Children. A. Strauch, Chicago.—p. 154.

*Acute Leukemia in Infant. L. W. Smith, Boston.—p. 162.

Bromin Poisoning Through Mother's Milk. F. Van Der Bogert, Schenectady, N. Y.—p. 167.

*Study of Seventy-Three Cases of Acute Arthritis in Infants. F. E. Johnson, New York.—p. 170.

Deviation of Aortic Septum; Complete Transposition of Great Vessels, Report of Two Cases in Infants. V. C. Jacobson, Boston.—p. 177.

Resistance of Acute Disease of Respiratory Tract in Children. J. Zahorsky, St. Louis.—p. 183.

*Diagnosis and Prognosis of Tuberculosis in Infancy. C. H. Dunn and S. A. Cohen, Boston.—p. 186.

New Apparatus and Method for Puncturing Superior Longitudinal Sinus in Infants. A. B. Ratner, New York.—p. 199.

*Case of Meningitis Due to Bacillus Acidi Lactici Occurring in a Premature Infant One Month Old. R. M. Greenthal, Ann Arbor, Mich.—p. 203.

*Heart Displacement Apparently Due to Mediastinal Emphysema Following Aspiration Pneumonia. E. C. Fleischner, San Francisco.—p. 206.

Effect of Injection of Nonspecific Protein on Diphtheria Virulence.—The effect of foreign protein injection on the results of the virulence tests for diphtheria in guinea-pigs was studied by Calhoun. Two nonspecific proteins were used, typhoid vaccine and normal horse serum. Calhoun found that typhoid vaccine, administered intracardially, increases the sensitiveness of the virulence tests both by the intradermal and the subcutaneous methods. Horse serum, injected intracardially, decreases and inhibits the intracutaneous test for virulent diphtheria organisms. These observations are presented in detail and at length, but it is established that there is experimentally no sufficient basis for substituting nonspecific protein for the specific antiserum treatment of diphtheria infections and intoxications. Antitoxin in the usual dosage is more efficient in every way than horse serum, and should be used by preference when procurable. In extraordinary situations, where antitoxin absolutely cannot be obtained, horse serum in large doses should be used as a substitute. Even as small amounts of antitoxin as 6 units will protect a 250 gm. guinea-pig against the injection of virulent organisms. The value of diphtheria antitoxin in diphtheria is emphasized by the results of these experiments.

Acute Endocarditis in Children.—Ledford's analysis shows that endocarditis in childhood is largely due to rheumatic fever infection, and it may occur as the first manifestation of that infection. In 151 cases, or 60.4 per cent., there was a history of rheumatic fever; in thirty-six cases, or 14.4 per cent., there was a history of chorea. Tonsillitis was the only associated condition found in thirty cases, or 12 per cent. It was present, however, in the majority of the choreic and rheumatic cases. Eight cases, or 3.2 per cent., were associated with local sepsis, including cervical adenitis, osteomyelitis and empyema. Pneumonia was found to be the only associated condition in two cases, and both these patients recovered. In four cases, or 1.6 per cent., there was a history of influenza. These were severe cases, two proving fatal. Two cases were due to scarlet fever and both these patients recovered. Endocarditis in children nearly always affects the mitral valve. The treatment in these cases consisted largely of rest in bed. The severely ill patients were not allowed to feed themselves but were fed in order to prevent even that slight exertion. The general measures of treatment employed were those for acute infectious diseases in general. Digitalis was used very infrequently, being given only in the cases of chronic valvular lesions with failure of compensation. It was not given in cases of simple acute endocarditis. Sedatives were used when demanded. When the heart was irritable and the action rapid, and especially if there was precordial pain, an ice bag was applied over the heart. Other symptoms were treated as they arose. One hundred and six patients, or 42.4 per cent., were discharged home, without active symptoms. Sixty-seven patients, or 26.8 per cent., were discharged with slightly active symptoms. Thirty-seven patients, or 14.8 per cent., were discharged against advice with active symptoms. Forty patients, or 16 per cent., died.

Blood Calcium and Calcium Therapy.—Plasma calcium was determined by Lyman's method on five children with very low electrical irritability and on twelve children with Thiemich's sign. The average value for the first group was found to be 11.2 mg. per hundred c.c.; for the second group 10.8 mg. per 100 c.c. Calcium lactate, in 6.0 gm. daily doses, fed to two children with Thiemich's sign without resultant change in the electrical irritability. Therefore, von Meysenbug concludes that Thiemich's sign in older children is not based on lowered blood calcium and that calcium feeding in large amounts does not influence the anodal reactions of older children.

Acute Leukemia in Infants.—A case of acute leukemia occurring apparently at birth or very shortly thereafter is reported by Smith. He has not been able to discover in the literature any record of a similar case. The patient is the youngest person in whom this disease has been noted. The chief point of interest in the case is the character of the lymphocytes. These cells varied greatly in size and are practically all pathologic cells. A few comparatively normal small lymphocytes occurred. Stained by Wright's method all the larger lymphocytes are exceedingly granular in character, their cytoplasm being filled with small, slightly basic staining granules which almost conceal the cytoplasm itself. Another feature of these large pathologic lymphoid "tumor" cells is the presence of apparent pseudopods budding from the cytoplasm, becoming pinched off, and thrown into the blood stream, forming what Smith terms "pseudoplatelets." According to the history, the disease began definitely at the age of 3 weeks, while the evidence seems to suggest strongly an intra-uterine development of the condition.

Acute Arthritis in Infants.—Of the seventy-three patients studied by Johnson, only thirty-two gave a history or showed on examination when admitted any definite source of infection. Pneumonia was a possible source of infection in ten cases, naval infection in four, furunculosis in three. The ages of the patients were from less than 1 month to 36 months. The knee (27 cases), ankle (26), shoulder (24), wrist (25), hip (17), elbow (14) and metacarpophalangeal joints (12) were affected more often than any other joints and in the order named. The streptococcus was responsible in 18 cases, the pneumococcus in 14 cases, the gonococcus in 7 cases. The greatest number of joints affected in 1 case was eight, and the gonococcus was the infecting organism. The prognosis is affected materially by the age. The older the baby, the better chance he has to recover. The high mortality among young babies is due, in great part, to the difficulty of feeding.

Tuberculosis in Infancy.—This paper is based on a series of 374 cases in which a clinical diagnosis of tuberculosis was made in the wards of the infants' Hospital and on a series of 138 necropsies in which lesions of tuberculosis were found.

Bacillus Acidi-Lactici Meningitis.—Of thirty-nine cases of meningitis in the new-born and infants under 3 months of age recorded in the literature Greenthal failed to find mention of *Bacillus acidi-lactici* as causing a meningitis. The only physical signs in his case were stupor and a bulging fontanel. The history of tuberculosis in the mother was suggestive of tuberculosis meningitis in the patient. However, the gross appearance of the spinal fluid was quite different from that usually described in colon meningitis (a dark brownish purulent fluid with an offensive odor). The fluid was pure white in color, it had no odor, and on standing looked like curdled milk. The portal of entry in this case was probably through the right middle ear. No other focus was found at necropsy. The causation of meningitis

by an organism such as *Bacillus acidi-lactici* can probably be explained by the fact that the patient, a premature infant, very poorly nourished, had not sufficient resistance to overcome even this ordinarily harmless saprophyte.

Heart Displacement by Mediastinal Emphysema.—Fleischner's case is interesting on account of the marked displacement of the heart which was apparently due to the rupture of some of the air vesicles of the inflamed lung allowing free air to escape into the mediastinum, from which it made its way up under the right clavicle and posteriorly over the right side. Were it not for the fact that subcutaneous emphysema manifested itself, it would have been very difficult to have excluded an intense interstitial emphysema of the left lung as the cause of the displacement, but considering the fact that the air escaped from the inflamed lung and not having been able to prove its presence in the pleural cavity, Fleischner was forced to the conclusion that the heart could only have been displaced by the presence of air in fairly large quantities in the mediastinum. A careful review of the literature failed to disclose any record of a similar observation.

Boston Medical and Surgical Journal

Feb. 10, 1921, **184**, No. 6

Industrial Question: A Proposal and Announcement. F. J. Cotton, Boston.—p. 135.
*Acute Infections of Pancreas. F. B. Sweet, Springfield, Mass.—p. 137.
Perineal Prostatectomy. J. D. Barney, Boston.—p. 140.
*Case of Ovarian Pregnancy. M. F. Fallon, Worcester.—p. 144.
*Glioma; Report of Case. H. Viets, Boston.—p. 150.

Acute Pancreatitis.—Six cases of acute pancreatitis are reported by Sweet. All the patients stressed epigastric pain; four of the six had fat necrosis; three had bloody or dirty fluid; two were jaundiced; three had leaden pallor; two only gave history of radiation of pain to right shoulder blade, although all had definite gallbladder disease with stone; all showed unmistakable gross change in pancreas; three patients operated on early made good if somewhat stormy recoveries; the three operated on late, yielded one death and two prolonged and septic illnesses with recovery only after a considerable portion of the gland substance had sloughed away.

Ovarian Pregnancy.—Fallon's patient was a multipara. She complained of abdominal pains. The pathologic examination of the specimen disclosed chorionic villi and multinucleated syncitial masses.

Glioma.—A case of glioma of the right temporal lobe is reported by Viets in which the tumor infiltrated and largely replaced the tissues of the lobe without deforming the general shape of the brain. A large cyst was formed. The tumor extended to the base of the brain and bulb where it ran in the subarachnoid space over a large part of the ventral surface of the brain and extended down the spinal cord to the conus terminalis without invasion of any part of the central nervous system except a small portion of the left cerebellum. The medulla and cord were greatly compressed by the tumor mass. The symptoms and signs of both a brain and spinal cord tumor are recorded with the report of a negative surgical exploration. Both macroscopically and microscopically the tumor showed the characteristics of a malignant glioma. The case illustrates in a striking manner the tendency of a glioma to extend along a serous surface without invasion.

Feb. 17, 1921, **184**, No. 7

*Hemorrhage from Stomach and Esophagus. F. B. Lund and J. A. Foley, Boston.—p. 163.
Lacerated Wound Into Knee Joint, Treated by Complete Closure and Immediate Active Mobilization. L. Allen, Burlington, Vt.—p. 167.
Prostatic Troubles from Practitioner's Viewpoint. R. E. Dickson, Holyoke, Mass.—p. 172.
Diagnosis of Some Chronic Shoulder Injuries. W. P. Coues, Boston.—p. 176.
Fracture Dislocation of Third Cervical Vertebra. L. O. A. Goddu, Boston.—p. 179.
*Two Cases of Benign Growths of Stomach. A. S. Merrill, Boston.—p. 181.

Hemorrhage from Stomach.—Lund cites the case of a girl, aged 14, who suddenly had a severe hemorrhage from the stomach, vomiting bright blood six times in one night. The vomiting of blood continued. In twenty-four hours, the hemoglobin was reduced to 37 per cent. Owing to the smallness of the veins, transfusion had to be attempted into the saphenous vein, and only 100 c.c. could be transfused. The patient died a few hours afterward, less than forty-eight hours after the bleeding began. The spleen weighed 695 gm.; there was cirrhosis of the liver and varicose veins surrounding the lower end of the esophagus, one of which at the cardia, had ruptured, exactly at the point where the esophageal mucous membrane abruptly changes to the cardiac type of gastric mucous membrane. In a second case reported the hemorrhage from a small ruptured vein in the esophagus was so slow as never to cause vomiting of blood until it had gone on so long as to produce a fatal anemia. The underlying cause of this condition was a carcinoma of the pancreas of very small size. The patient was 53 years of age. Two cases of bleeding gastric ulcer are also reported.

Tumors of Stomach.—Merrill reports a case of polypoid adenoma and one of fibroma of the stomach. In both cases the diagnosis was made by roentgen-ray examination. The symptoms were not decidedly gastric in nature. The growths were removed surgically.

Journal of Immunology, Baltimore

January, 1921, **6**, No. 1

*Microbal Studies of Acute Respiratory Infections with Especial Consideration of Immunologic Types. W. H. Park, A. W. Williams and C. Krumwiede, New York.—p. 1.
Id. I. Methods of Demonstrating Micro-organisms, Including "Filtrable Viruses," from Upper Respiratory Tract in "Health," in "Common Colds" and in "Influenza" with the Object of Discovering "Common Strains." A. W. Williams, M. Nevin and C. R. Gurley, New York.—p. 5.
Id. II. Serologic Relationships of Pneumococci from Upper Respiratory Tract with Special Reference to Common Colds and Influenzal Conditions. G. M. Cooper, L. Mishulow and N. E. Blanc, New York.—p. 25.
Id. III. Relationship to Upper Respiratory Infections of Streptococci Producing a Green Zone on Standard Blood Agar Plates (Smith and Brown's Alpha Type.) A. W. Williams, A. Unneberg, A. Goldman and H. Hussey, New York.—p. 53.
Id. IV. Grouping of Influenza Bacilli with Special Reference to Permanence of Type in Carrier. O. R. Povitzky and H. T. Denny, New York.—p. 65.
*Id. V. Accidental Inoculation of Influenza Bacilli on Mucous Membranes of Healthy Persons with Development of Infection in at Least One. Persistence of Type Characteristics of Bacilli. W. H. Park and G. Cooper, New York.—p. 81.
Id. VI. Serologic Study of Pfeiffer Bacillus. A. F. Coca and M. F. Kelley, New York.—p. 87.
*Id. VII. Report on Prophylactic Vaccination of 1,536 Persons Against Acute Respiratory Diseases, 1919-1920. A. I. Von Sholly and W. H. Park, New York.—p. 103.

Microbal Studies of Acute Respiratory Infections.—The chief object of all the investigations reported on by Park and his associates was to demonstrate a common "epidemic" or "outbreak" strain among the groups of microbes claimed to have caused epidemics. The results indicate that of the different groups of microorganisms isolated, all had the peculiarity that each group was an assemblage of many types. This was equally true for the pneumococcus, the influenza bacillus, the green-producing streptococci and the hemolytic streptococci. No evidence was obtained of the existence of a common filtrable organism. The question of the relationship between the bacterial types used in vaccination and the microbal strains obtained from the throats of the vaccinated remained mostly unanswered. The specific strains of organisms used in the vaccines were not found to any extent in either normals or the diseased. It is a curious fact that in all but one instance the fixed types of pneumococci, as found in eleven of all the cases examined, occurred among the unvaccinated influenza cases. This loses significance, however, in the light of the fact that in only six of the cultured influenza cases was vaccine used and in forty-two it was not used. The evidence of immunologic response to the vaccine was apparent only in the lessened incidence of pneumonia. The percentage of colds was as great among the vaccinated as among the unvaccinated. The pneumonia incidence was much less. The greater multiplicity of types of microbes believed to be capable of exciting common colds over those usually exciting pneumonia is, possibly, the explanation of the apparent uselessness of the vaccines employed in this series in preventing minor respiratory infections while apparently affording considerable protection against pneumonia.

Accidental Influenza Inoculations.—The three accidental inoculations of influenza bacilli (eighteen hour cultures on

chocolate agar) noted by Park and Cooper are of interest from the fact that infection developed in one case on the fourth day; possibly, in one case on the fourteenth day and not at all in third case. All three persons, however, became persistent carriers of the bacilli, and in all cases the strains held their agglutination characteristics unchanged during the period of the tests.

Vaccination Against Respiratory Diseases.—From the examination of their statistics, Von Sholly and Park found that contrary conclusions could be drawn, depending on whichever part of the report stress is laid. Comparing the incidence of the respiratory affections among the inoculated and the uninoculated, excluding pneumonia, and considering the severity of these respiratory affections, it may be asserted that the vaccines were of little or no appreciable value. If, on the other hand, attention is focused on the figures that show a somewhat higher susceptibility to respiratory diseases among the vaccinated in their past histories; a larger group absence for respiratory disease among the not vaccinated and a longer average absence per person for attacks of "grippe" in the not inoculated group, it may be concluded that the vaccines had a beneficial influence. On the whole, balancing both sides, the evidence does not make a strong case in favor of the vaccines given as a prophylactic agent against acute respiratory diseases—pneumonia alone excepted. This work tends to confirm the conclusions of Lister and Cecil and Austin on the value of a typed pneumococcus vaccine for pneumonia.

Journal of Laboratory and Clinical Medicine, St. Louis

January, 1921, **6**, No. 4

Etiology of Acute Inflammations of Nose, Pharynx and Tonsils. S. Mudd, S. B. Grant and A. Goldman, St. Louis.—p. 175.
*Unsuccessful Result Following Transfusion with Immunized Blood in Case of Infectious Endocarditis. L. A. Levison, Toledo, Ohio.—p. 191.
*James Theory of Emotions in Relation to Suprarenal Glands. C. E. Kieley, Cincinnati.—p. 193.
*Blood Coagulation. E. C. Mason, Cincinnati.—p. 195.
Analysis of One Hundred Postmortem Examinations in Siam. A. G. Ellis, Bangkok, Siam.—p. 199.
Case of Spontaneous, Acute and Subacute Peptic Ulcers and Carcinoma of Thyroid in a Dog. F. C. Mann, Rochester.—p. 213.
*Method for Removal of Natural Amboceptor from Human Serum. R. L. Kahn, Lansing, Mich.—p. 218.
*Determination of Lactose in Milk by Colorimetric Method. R. G. Owen and R. Gregg, Detroit.—p. 220.
Simple Shaking Device. J. P. Baumberger, Stanford Univ., Calif. —p. 222.
Determination of Coagulable Protein in Serum. W. N. Berg, Washington, D. C.—p. 223.

Transfusion with Immunized Blood in Infectious Endocarditis.—Symptomatic measures were employed throughout the illness in the case cited by Levison. Injections of sodium cacodylate were without apparent effect. It was decided after the isolation of the streptococcus from the blood to prepare a vaccine from this organism, immunize a donor (Group II) and give the patient repeated blood transfusions from this immunized blood. A donor was selected in the person of a maternal uncle. He was given repeated injections of vaccine prior to the first transfusion and continued throughout at intervals of four days. Four transfusions were done by the citrate method, employing from 500 to 600 c.c. of blood at each injection. In all, 2,200 c.c. of blood were transfused within a period of five weeks. The result of the transfusions was to increase the hemoglobin content of the blood, raise the number of red cells, lower the number of leukocytes and decrease the percentage of polymorphonuclear cells. The strength of the patient was maintained by this procedure to a marked degree. However, there was no definite change in temperature curve following any of the transfusions. At no time did the temperature remain normal for the duration of even one day. The pulse rate was not reduced. Death occurred with the patient comatose and the heart in fibrillation.

Emotions in Relation to Suprarenal Glands.—The subjects for the therapeutic tests made by Kieley were both psychasthenics whose most prominent symptom was fear. The chief complaint made by one subject was fear of death. Every conceivable form of therapy had been tried without result. Finally, Kieley gave hypodermically from 1 to 2 c.c. of 1 per cent. apocodeine solution, every other day, until twenty injections were reached. The patient did not experience even the slightest temporary alleviation of her anxiety. The second subject had a history significant for psychoneurotic disease. During the influenza epidemic he was advised to drink whiskey for prophylaxis. For three months he had one or two drinks a day and dates his fears from that time. His phobia was mainly that of committing suicide. He was well satisfied with life and had no desire for death but was obsessed with a fear of self-destruction. This man was given fifteen injections of 1 per cent. apocodeine solution, ranging in dose from 1 to 2 c.c. There has never been any sense of relief from the fear. Kieley contends that these two experiments indicate that an emotion can be experienced independently of the physical changes which habitually accompany it.

Blood Coagulation.—The work done by Mason was based on the belief that protective colloids probably played a part in blood coagulation. He uses only three terms: fibrinogen, calcium and phospholipin complex. Of the three factors mentioned, it is certain that fibrinogen and calcium are present in the plasma of the circulating blood. The question arises as to whether or not the phospholipin complex is present, and if present, is it in some inactive form. Mason's plan considers that after the protective influence is removed from the phospholipin complex, coagulation is the result of the combination of the three substances in the diagram; that is, phospholipin, calcium and the precipitating portion of fibrinogen, and the final clot contains these portions. The calcium (salt) probably binds to the phosphorus in place of the protective portion, and the other bond of calcium binds the fibrinogen portion.

Method for Removal of Amboceptor from Blood Serum.—The method described by Kahn is based on the well-known affinity of sheep cells for antisheep amboceptor, and consists of adding packed sheep cells to inactivated serum in the proportion of one drop per cubic centimeter of serum, and permitting the extraction to take place for ten minutes at room temperature.

Lactose Determination by Colorimetric Method.—This method is an adaptation of Folin's latest blood sugar determination to the estimation of lactose. The reagents used are those described by Folin.

Kentucky Medical Journal, Bowling Green

January, 1921, **19**, No. 1

Recent Developments in Contagious Diseases. J. W. Bruce, Louisville. —p. 5.
Syphilis and Eye. A. O. Pfingst, Louisville.—p. 11.
Hemorrhage in Operative Treatment of Fibroid Tumors of Uterus. L. S. McMurty, Louisville.—p. 17.
Case Showing Endocrinal Disturbance. C. Pope, Louisville.—p. 21.

Laryngoscope, St. Louis

January, 1921, **31**, No. 1

Technic of Radical Frontal Sinus Operation Which has Given me Best Results. R. C. Lynch, New Orleans.—p. 1.
Education of Vestibular Sense. W. G. Ruggles, New York.—p. 6.
Three Cases of Mastoiditis with Severe Complications and Recovery. A. H. Cook, Philadelphia.—p. 12.
Hemorrhage from Ear. H. M. Hays, New York.—p. 20.
Does Removal of Adenoid Vegetations Prevent Acute Disease of Middle Ear? J. Zahorsky, St. Louis.—p. 22.
Simple, Bloodless Tonsillectomy, with Simple, Safe, Local Anesthesia. J. A. Thompson, Cincinnati.—p. 26.
Local Anesthesia in Nasal and Throat Surgery. O. Wilkinson, Washington, D. C.—p. 27.
Chronic Atrophic Catarrh or Fetid Ozena. J. S. Reynolds, Minneapolis. —p. 31.
Ear Massage with a Politzer Diagnostic Tube. I. F. Shapiro, New York.—p. 32.
Falsetto Voice in Male; Four Cured Cases. J. S. Greene, New York. —p. 33.
Boilable Tip and Connection for Politzer Bag. D. E. Godwin, Houghton, Mich.—p. 41.
Technic of Closing Sinus Tonsillaris by Suturing Pillars of Fauces with Aid of La Force's Hollow Suture Needle and Ligature Knot Fastener. B. D. LaForce, Ottumwa, Ia.—p. 42.

Medical Record, New York

Feb. 5, 1921, **99**, No. 6

Work of American Society for Control of Cancer. C. A. Powers, Denver.—p. 211.
Chronic Appendicitis, So-called. F. G. Connell, Oshkosh, Wis.—p. 214.
Concept of Roentgen-Ray Pathology. V. Osteopathy. A. J. Pacini, Washington, D. C.—p. 218.

*Case of Polycythemia Vera (Vaquez's or Osler's Disease). S. Gitlow, New York.—p. 227.
Pathologic Conditions of Organs of Reproduction in Female Causing and Simulating Gastro-enteric Disturbance. J. Katz, Brooklyn.—p. 228.

Polycythemia Vera.—Dizziness and giddiness, easy fatigability, pains of a neuralgic character over various parts of the body, and increasing ruddiness of the face were the chief symptoms in the case cited by Gitlow. With the development of all these symptoms there was an obstinate constipation, whereas formerly the patient, a woman, aged 59, had been very regular. She occasionally had colicky pains in the epigastrium, during which she always vomited bloody mucus. Her gums bled at the slightest provocation and she had occasional nose bleed. Her menstruation was normal to the menopause at 44. The only etiologic point in the history is the concurrence of the death of the husband with the onset of the symptoms. The blood was examined twice. The first count yielded 6,500,000 red cells and 105 per cent. hemoglobin (Dare). The white count was not made at this time. The second examination gave 6,740,000 red blood cells and 140 per cent. hemoglobin (Sahli). There were 14,000 white blood cells with 83 per cent. polymorphonuclears. The color index was 0.7 the first time and 0.9 the second.

Feb. 12, 1921, **99**, No. 7

*Convalescent Treatment of Heart Disease by Exercise Applied Through Natural Work and Play Methods. F. Brush, White Plains, N. Y.—p. 253.
Concept of Roentgen Ray Pathology. VI. Arthropathy. A. J. Pacini, Washington, D. C.—p. 259.
Pyuria. A. L. Wolbarst, New York.—p. 264.
Cause of Death from Nitrous Oxid-Oxygen Anesthesia. J. F. Baldwin, Columbus, Ohio.—p. 266.
Case of Unilateral Auditory Hallucinosis. H. S. Hulbert, Oak Park, Ill.—p. 267.
Case of Intestinal Intoxication (Herter's Intestinal Infantilism). S. Z. Orgel, New York.—p. 268.
Case of Acute Articular Rheumatism Complicating Acute Otitis Media. J. Popper, New York.—p. 270.

Exercise in Heart Disease.—Brush reports on an experience with 2,500 cases of valvular heart disease treated alongside of other patients in a free convalescent institution from April 1, 1915, to July 1, 1920. Records of 1,000 of these cases, in two groups representative of the earlier and later methods, are especially studied. The various gymnastic exercises are not considered as unfeasible nor unsuccessful in the convalescent treatment of heart disease. These heart patients are directed to begin at once to play croquet, short-golf, quoits, soccer practice, coasting and snow sports in season, volley ball, tether ball, short trial dancing, group games on the green, and ball play (light practice). After from one to ten days of observation and lighter routine activity, work therapy of about one and one-half hours a day is begun.

Feb. 19, 1921, **99**, No. 8

*Possible Relation of Suprarenal Cortex to Exophthalmic Goiter and to Myxedema. G. A. Friedman, New York.—p. 295.
Vaccine Therapy vs. Tonsillectomy in Systemic Disease of Tonsillar Origin. H. Hays, A. Palmer and T. S. Winslow, New York.—p. 301.
Whitman Operation as Applied to Various Types of Paralytic Deformities of Foot. A. Whitman, New York.—p. 304.
Man and Endocrines; with Stress on the Females. G. K. Dickinson, Jersey City, N. J.—p. 307.
Chronic Pulmonary Inflammation in Young Adults. F. P. Miller, Los Angeles.—p. 309.
Concept of Roentgen-Ray Pathology. VII. Craniopathy. A. J. Pacini, Washington, D. C.—p. 311.

Relation of Suprarenal Cortex to Exophthalmic Goiter.—The anatomy and physiology of the suprarenal gland is discussed by Friedman and emphasis is laid on the separate functions of the cortex and the medulla. Friedman states that there is not a single case on record in which life was possible without a cortex; but there are recorded cases which show that in some individuals the medulla was absent. The fact that the cortex and the medulla are united to form one organ in man and other higher animals, and not separated as in fish, shows that such arrangement is necessary for the harmonious working of both suprarenal portions. The chief function of the cortex seems to consist in supplying the medulla, either directly or indirectly, with its products for the elaboration of epinephrin. The second function of the cortex is probably a detoxicating one. The cortex also controls the body weight. Still another function of the cortex is the control of the blood pressure, although to a lesser degree than the medulla. It regulates the purin metabolism of the body and the physiological pigment metabolism. It probably destroys pathogenic bacteria of the body. Some of the clinical symptoms found in individuals afflicted with Addison's disease, such as emaciation, asthenia, and hyperpigmentation, manifest themselves to a lesser degree in individuals suffering from exophthalmic goiter. The symptoms have been shown to be due chiefly to various degrees of suprarenal cortical deficiency. The gain in weight and the abscence of true asthenia in myxedema must be due indirectly to hyperfunction of the cortex. The suggestion is made that hyperthyroidism and myxedema are not monoglandular disturbances.

New York Medical Journal

Feb. 12, 1921, **113**, No. 7

Surgical Aspect of Hyperthyroidism. J. B. Deaver, Philadelphia.—p. 265.
Exophthalmic Goiter. I. Bram, Philadelphia.—266.
Roentgen Ray Therapy in Hyperthyroidism. W. C. Baker, Philadelphia.—p. 273.
Hyperthyroidism in Child. M. H. Frantz, New York.—p. 275.
Goiter. H. L. Northrop, Philadelphia.—p. 277.
Successful Surgery in Cases with Endocrine Disturbances. W. Neumann, Brooklyn.—p. 280.
Thyroid Deficiency in Otolaryngology. J. C. Callison, New York.—p. 283.
Fatigue; Endocrine Weariness. J. McNulty, New York.—p. 288.
Thymic Disease. A. E. Siegel, Philadelphia.—p. 290.
Addison's Disease. J. Eidelsberg, New York.—p. 292.

Feb. 19, 1921, **113**, No. 8

Minimum Course in Psychopathology for Medical Students. E. J. Kempf, New York.—p. 309.
*Action of Various Salts on Liver After Their Introduction into Duodenum. M. Einhorn, New York.—p. 313.
Ileocolostomy and Exclusion in Dilatation of Cecum and Colon. H. Illoway, New York.—p. 321.
Thyroid Deficiency in Otolaryngology. J. G. Callison, New York.—p. 326.
Exophthalmic Goiter and Surgery. I. Bram, Philadelphia.—p. 330.
Ulcer of Cornea. H. Tuttle, Ithaca.—p. 332.
Some Toxicologic Aspects of Surgical Rubber Goods. W. I. Galland, New York.—p. 334.
Medical Student's Problem. G. H. Hyslop, New York.—p. 336.

Introducing Salts Into Duodenum.—Studies made by Einhorn are interpreted as showing definitely that the efficacy of the magnesium and sodium sulphates in liver disturbances becomes more clear. These salts seem to stimulate this organ. The aperient waters are ordinarily taken by mouth. Einhorn wonders whether they would not manifest quicker and better action when instilled directly into the duodenum.

Northwest Medicine, Seattle

February, 1921, **21**, No. 2

Bearing of Cancer Problem on Prolongaton of Human Life. J. A. Pettit, Portland, Ore.—p. 25.
Paget's Disease of Breast. J. E. Else, Portland, Ore.—p. 27.
Induction of Labor at Term. F. R. Fursey, Spokane.—p. 30.
Hydatid Mole. H. P. Kirtley, Salt Lake City.—p. 31.
Dependent Drainage in Purulent Appendicitis. A. E. Rockey, Portland, Ore.—p. 33.
Clinical Review of Stomach Symptoms. J. M. Blackford, Seattle.—p. 36.
Syphilis of Nervous System. A. A. Robinson, Ogden, Utah.—p. 39.
Incidence of Syphilis in Insane. W. N. Keller, Steilacoom, Wash.—p. 42.
*New Method for Tonsillectomy. J. A. Fulton, Astoria, Ore.—p. 44.

New Tonsillectomy Instrument.—Fulton has devised an instrument which is in the nature of a compression forcep and snare, which has proved to be very satisfactory in my hands. It is made on the principle of the forceps with handles at right angles. One blade of the forcep has a flat surface on the distal end that is intended to rest on the cheek over the external surface of the ramus of the jaw. The other blade is provided with a groove to admit and conceal a snare. The snare is controlled by a screw working on a shaft running through the blade of the instrument.

Oklahoma State Medical Ass'n Journal, Muskogee

January, 1921, **14**, No. 1

Appeal for Better Handling of Appendiceal Cases. F. H. McGregor, Mangum.—p. 1.
Acute Abdomen in Infancy and Childhood. G. A. Wall, Tulsa.—p. 3.
Convalescent Period of Puerperium. J. P. Torrey, Bartlesville.—p. 6.

Pennsylvania Medical Journal, Harrisburg

February, 1921, **24**, No. 5

Tuberculosis in Children. W. N. Bradley, Philadelphia.—p. 285.
*Acrodynia. H. J. Cartin, Johnstown.—p. 287.
Obstetrics and General Practitioner. J. W. Williams, Baltimore.—p. 290.
Effect of Influenza on Tuberculosis. C. H. Marcy, Pittsburgh.—p. 296.
Postinfluenzal Chest. A. C. Morgan, Philadelphia.—p. 299.
Acute Traumatic Surgery of Abdomen. L. J. Hammond, Philadelphia. —p. 303.
Early Diagnosis of Perforated Gastric or Duodenal Ulcer. W. L. Estes, South Bethlehem, Pa.—p. 307.
Gastro-Enterostomy: Occasional Disappointments that Follow. H. L. Foss, Danville, Pa.—p. 309.
Gastric Symptoms from Surgical Viewpoint. A. W. Hammer, Philadelphia.—p. 316.

Acrodynia.—The five cases reported by Cartin were of varying severity, presenting all, or nearly all, of the following symptoms: an eruption, papular, lying in an erythematous base; at times macular; photophobia; parathesia and irritability; burrowing of the head; chewing of fingers and hands; profuse nasal discharge; apathy; lack of appetite; leukocytosis pigmented spots; scanty urine. No treatment seemed to be of any benefit. There were no deaths, but the patients had a slow convalescence.

Southern Medical Journal, Birmingham, Ala.

February, 1921, **14**, No. 2

Importance of Knowledge of Syphilis to Internist. E. B. Bradley, Lexington, Ky.—p. 91.
*Physiologic Basis for Treatment of Chronic Constipation. H. W. Soper, St. Louis.—p. 99.
*Study of Reactions Following Transfusion of Blood. P. W. Clough and M. C. Clough, Baltimore.—p. 104.
*Administration of Digitalis to Children with Diphtheria. H. McCullough, St. Louis.—p. 110.
*Case of Formalin Urticaria. J. D. Guyot, Bucklin, Mo.—p. 115.
Health Insurance. F. R. Green, Chicago.—p. 116.
Surgical Monstrosities and Monster Growths. L. H. Landry, New Orleans, La.
*Incidence of Kidney Infections in Acute Appendicitis. R. M. Harbin, Rome, Ga.—p. 139.
Ureteral Calculi. A. J. Crowell and R. Thompson, Charlotte, N. C. —p. 144.
*Nonunion of Humerus: Repair by Means of Bone Graft. M. S. Henderson, Rochester, Minn.—p. 148.
Prenatal Supercision. Q. U. Newell, St. Louis.—p. 155.
Unrecognized Glaucoma and General's Practitioner's Responsibility in Its Diagnosis. H. Woods, Baltimore.—p. 160.
Atypical Mastoiditis Following Staphylococcemia. H. M. Taylor, Jacksonville, Fla.—p. 167.

Colon Function and Constipation.—Soper emphasizes the rôle which defects in the lower colon play in the production of chronic constipation. He considers especially that large group of patients who are unquestionably damaged by the daily use of purgatives and enemata. Many of these patients suffer from "autointoxication." Obstructive elements in the lower bowel lead to a slowing up all along the line and cause the aberrant biochemical changes concerned in the production of symptoms usually termed autointoxication, and which disappear, in a large majority of cases, after restoration of colonic function. The treatment of each group is outlined.

Reactions Following Blood Transfusion.—The common form of reaction following transfusion, the Cloughs state, is the febrile type. These reactions follow the injection of compatible blood and cannot be foreseen by preliminary blood tests. The cause of these reactions is still in dispute. The most important factor is probably the change in the platelets, associated with incipient coagulative changes in the blood. Injury to the red cells by the citrate is possibly also a factor. The hemolytic type of reaction follows the injection of incompatible blood. These reactions can always be foreseen by adequate preliminary tests. Some of the severe reactions occurring in patients with pernicious anemia who have received a large number of transfusions apparently do not fall into either category. They may occur after transfusion from donors belonging to the same blood group as the patient, and may be associated with hemolysis and hemoglobinuria. In one case reported, the serum showed feeble hemolytic activity in vitro for cells from individuals of the same blood group. This hemolytic activity must therefore, differ entirely from the ordinary isohemolytic activity, which is only exerted on cells of other groups. This observation emphasizes the importance of testing the action of the recipient's serum on the donor's cells, but it seems probable that the methods now in use will not suffice to foresee and avoid all such reactions.

Use of Digitalis in Diphtheria Contraindicated.—As the effect of diphtheria toxin on the heart is similar in many ways to the effect on the heart of digitalis, either directly or through the vagus nerve, McCullough states that the administration of digitalis to patients with diphtheria is contraindicated because there would result a summation of effects in the same heart.

Formaldehyd Urticaria.—In Guyot's case the use of liquor formaldehydi in a tooth cavity caused a violent urticaria. After removing the application and thoroughly flushing the cavity, the urticaria disappeared in six hours.

Kidney Infections with Appendicitis.—Harbin reports four cases of active kidney infections among thirty-two cases of acute appendicitis. The diagnosis was not made until at the time of operation.

Bone Grafting.—Henderson endorses the use of the massive graft taken from the flat internal surface of the tibia and applied to the fragments after their periosteum has been removed and the outer portion of the cortex until the cancellous or endosteal layer is exposed. Against this layer, which has strong bone forming properties, is placed the endosteal surface of the graft. Two or more beef bone screws are placed through the graft into each fragment, the screws going through the opposite cortex. In this manner a much larger graft than the intramedullary or inlay grafts can be used. The chief advantage is that the bone producing elements in the graft and in the fragment are in contact over a very large area. It is Henderson's belief that a large part, at least, of this graft maintains its vitality and becomes one with the fragments. His reasons for this belief are based entirely on clinical experience. Union is brought about much more rapidly than with other grafts and the roentgenogram shows early union of the graft to the fragments.

Surgery, Gynecology and Obstetrics, Chicago

February, 1921, **32**, No. 2

*Mortality and End-Results in Surgery. W. J. Mayo, Rochester, Minn. —p. 97.
*Surgical Treatment and Pathology of Gastric and Duodenal Ulcer. J. B. Deaver and S. P. Reimann, Philadelphia.—p. 103.
*Diagnosis and Treatment of Hydrocephalus Due to Occlusions of Foramina of Magendie and Luschka. W. E. Dandy, Baltimore. —p. 112.
Surgical Significance of Common Bile Duct Sphincter. G. L. McWhorter, Chicago.—p. 124.
Case of Pudendal Hernia. J. F. Grattan, New York.—p. 131.
*Varicose Veins of Female Pelvis. L. A. Emge, San Francisco. —p. 133.
*Ureteroceles: Review of Literature and Report of Four Cases. M. Lavandera, New York.—p. 139.
*Cysts and Fistulas of Thyroglossal Duct. P. K. Gilman, San Francisco. —p. 141.
Operative Technic Employed in Closure of an Extensive Vesico-Urethro-Vaginal Fistula. G. G. Ward, New York.—p. 150.
Vesico-Appendiceal Fistulas. Report of Two Cases. F. W. Rankin and E. S. Judd, Rochester, Minn.—p. 153.
Combination of Radium and Roentgen Ray in Certain Types of Carcinoma of Breast. D. Quick, New York.—p. 156.
*Caries of Costal Cartilages Following Relapsing Fever. W. M. Post, Princeton, N. J.—p. 169.
*Missed Abortion. A. J. Rongy and S. S. Arluck, New York.—p. 171.
Roentgen Ray in Diagnosis of Prostatism. H. McC. Johnson, San Antonio, Texas.—p. 179.
*Supernumerary Thumbs. J. C. O'Day, Honolulu, Hawaii.—p. 181.
*Cleft Plate Extaordinary. T. W. Brophy, Chicago.—p. 182.
Intermittent Obstruction Due to Gastroptosis. C. Davison, Chicago. —p. 184.

End Results of Abdominal Surgery.—In 1919, 10,280 operations were performed by ten surgeons working under similar conditions in St. Mary's Hospital, Rochester, Minn., with a mortality rate of 1.7 per cent. Five thousand six hundred and seventy-five of these operations were performed for conditions involving the abdominal cavity. It is of these cases that Mayo speaks. The mortality rate was: 265 operations on the ovaries and fallopian tubes for cancer of the ovaries, all types of ovarian cysts, tuberculosis of the tubes, extra-uterine pregnancy, pus tubes, infections, etc., with a mortality rate of 0.7 per cent.; 539 hysterectomies—mortality, 1.6 per cent.; 1,000 cholecystectomies—mortality, 1.6 per cent.; 139 operations for stones in the common and hepatic ducts—mortality, 8.6 per cent.; 711 operations on duodenum for acute and chronic ulcers and their complications—mortality, 0.9 per cent.; 105 resections of stomach for cancer with ten deaths. The radical operation was performed on sixty-three patients

with carcinoma of the large intestine, with eleven deaths, and on seventy patients with carcinoma of the rectum and rectosigmoid with seven deaths. The two great causes of death following operation in these gastro-intestinal cases are, Mayo says, sepsis and secondary pulmonary complications. Early operation in cases of benign and malignant disease would reduce the mortality and give better end results. Mayo states that the medical profession is not in accord with regard to the necessary steps to bring this about, and it is not to be expected that the public will respect divided opinions. The surgeon is often intolerant and the internist self-sufficient. The patient, because he has a surgical complication, is arbitrarily assigned to a surgical ward; or a surgical patient, because the diagnosis is uncertain, is detained unduly in a medical ward. A very respectable minority of diseases are on the borderline. There should be hospital beds especially devoted to such borderline cases in which the indications for treatment are not clear, in order that a joint attack may be made on disease. One group of cases may be treated surgically, and another similar group medically, and direct comparison made from a noncompetitive standpoint.

Surgical Treatment of Gastric and Duodenal Ulcers.—As to the best manner of treating these ulcers by means of surgery, Deaver says, excision remains the operation of choice, but it cannot always be the chosen method, much depending on the location of the ulcer, its size, the degree of involvement of the visceral coats, extent of induration, etc. It is his practice, whenever possible, to excise the ulcer with knife or cautery. When the ulcer has not to any great extent impaired the mechanism and the motility of the stomach, simple excision without a posterior gastro-enterostomy will suffice. But from the standpoint of rationality and cure, that is to say, subsequent freedom from symptoms, gastro-enterostomy is indicated in all cases that present marked hyperacidity before operation.

Surgical Treatment of Hydrocephalus.—In previous papers Dandy has shown the absolute necessity of communication between the ventricles and the subarachnoid space, that cerebrospinal fluid is formed from the choroid plexus located in each of the four ventricles, and that in no part of the ventricular system is there any appreciable absorption. It is for these reasons that the foramina of Luschka and Magendie are necessary. They permit the fluid to pass to the absorbing area of the brain—the subarachnoid space. The normal ventricular pathway of cerebrospinal fluid is from each lateral ventricle through its foramen of Monro into the third ventricle thence through the aqueduct of Sylvius into the fourth ventricle and from there into the cisterna magna through the foramina of Magendie and Luschka. There are no other openings which allow communication between the ventricles and the subarachnoid space; all other openings which have been described are artefacts; nor has it been possible to establish artificial openings in other parts of the brain to replace these openings when they become closed, except by the operation which is proposed; here alone, the anatomic conditions are such as to favor the restoration of these openings. A group of cases is presented with occlusion of these foramina and with a hydrocephalus resulting therefrom. Undoubtedly, the disease, occurring in adult life, follows an inflammatory process which may or may not have been clinically evident. Probably, failure of the foramina to develop accounts for the hydrocephalus in many cases which are recognized soon after birth; in other infants an intra-uterine or postnatal inflammation is the cause. Although the general results of the occlusion are the same in every case, there are marked local anatomic differences due to the extent of the inflammatory process and the time of its development. There are no clinical features which permit one to make an absolute diagnosis of occlusion of the foramina of Magendie and Luschka. In every instance, both in adults and infants the diagnosis of hydrocephalus is possible; the exact site and the character of the obstruction causing the hydrocephalus can be determined by ventriculography and by the phenolsulphonephthalein test. The lesion can always be found at operation. An operative treatment is presented. Two adults have apparently been cured by this proceedure, which attacks the cause directly.

Varicose Veins of Female Pelvis.—Emge analyzes thirty-five cases of varicose veins of the female pelvis. He maintains that varicose veins of the broad ligament in general and of the ovarian circulation in particular are comparatively common occurrences in women. The symptomatology is plain enough in most uncomplicated cases to suggest their presence. The diagnosis is, in most instances, made certain by rectovaginal examination in the recumbent, alternating with the sitting position. The differential diagnosis is aided by the normal leukocyte count. Mild and early cases can be relieved permanently by conservative measures. The resection of the veins, or more so hysterectomies, is unnecessary to accomplish a cure. A high suspension of the uterus with a shortening of the uterosacral ligaments offers the best means for a permanent symptomatic cure with a possibility of a permanent anatomic regulation.

Ureteroceles.—A study of all the papers on ureteroceles from 1856 to the present day, together with the cases reported by Lavandera, seems to warrant the conclusion that ureteroceles, found at birth and at all ages, about equal in number for both sexes, rarely bilateral and frequently associated with other anomalies, are congenital malformations.

Cysts of Thyroglossal Duct.—Gilman reviews the embryology anatomy and pathology of cysts and fistulas of the thyroglossal duct and reports ten cases.

Caries of Costal Cartilages Following Relapsing Fever.—Special emphasis is placed by Post (the patient in the case) on the site of infection in his case, i. e., the posterior aspect of the costal cartilages and the low resistance of the cartilages themselves, which together account for the extensive burrowing and call for radical resection of the overlying tissues in order to give adequate drainage and prevent reinfection. He has undergone several operations, increasingly radical until, with the removal of sections of the fifth, sixth and seventh cartilages and ribs recovery now seems assured. Post says that this sequel of relapsing fever is not mentioned in textbooks. He contracted the disease in Persia.

Missed Abortion.—While diagnosis of missed abortion may not infrequently be difficult to make, Rongy and Arluck claim that close observation of the patient during the early period of pregnancy, will in the majority of cases bring out that there exists a disproportion between the size of the uterus and the history of cessation of menstruation. This with the many other signs and symptoms that usually accompany this condition must sooner or later help definitely to establish the diagnosis and once a diagnosis of missed abortion has been made, the uterus should be promptly emptied.

Supernumerary Thumbs.—O'Day's case is quite unusual inasmuch as the right hand had two distinct thumbs while the left had practically two thumbs quite completely webbed. The extensors and flexors of the right proximal thumb enabled the unusual motions of that digit, while the distal thumb was inert because of the absence of either flexor or extensor attachments.

Cleft Palate Extraordinary.—Brophy reports a case of cleft of the palate in the median line, with the premaxillary bones separated at the central suture and the palate cleft throughout the entire length. He has never before seen a similar case nor does a careful review of surgical literature furnish a single example of deformity of this character.

Texas State Journal of Medicine, Fort Worth

January, 1921, **16**, No. 9

State Medicine and Public Hygiene. G. W. Goddard, Austin.—p. 375.
Unity of Organization for Public Health Activities. C. C. Pierce, Washington, D. C.—p. 377.
Law Enforcement. O. Davis, Austin.—p. 380.
Relation of Medical Profession to Venereal Disease Control. W. A. King, San Antonio.—p. 383.
County Health Work. A. P. Harrison, Austin.—p. 384.
Necessity of Making Birth and Death Reports. M. E. Parker, Austin.—p. 387.
Disposal of City's Waste. V. M. Ehlers, Austin.—p. 390.
Discharged Soldier and Public Health. J. H. White, Washington, D. C.—p. 392.
Child Hygiene and Public Health Nursing. E. Parsons, Austin.—p. 394.
Need for a Hospital for Tuberculous Negroes in Texas. A. D. Randolph, Austin.—p. 397.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Jan. 8, 1921, **1**, No. 3132

*Lines of Advance in Surgery of Breast Cancer. W. S. Handley.—p. 37.
Subacute Bacterial Endocarditis. B. Parsons-Smith.—p. 43.
*Operation for Radical Cure of Premasseteric Fistula of Stenson's Duct. G. Chubb.—p. 45.
*Epinephrin in Resuscitation from Apparent Death. C. Walker.—p. 46.
Complement Fixation Tests in the Diagnosis of Tuberculous Infections. A. Sellers and E. N. Ramsbottom.—p. 47.
*Case of Cardiac Massage. R. B. Coleman.—p. 47.
Lethargic Encephalitis. W. Harris.—p. 47.

Surgery of Breast Cancer.—Handley again calls attention to the fact that the opinion long held that cancer spreads along the skin, is shown by pathology to be erroneous. The apparent spread of cancer along the skin is really a punctate spread to the skin at various isolated points from the infected subjacent fascial lymphatic plexus. Since this process is secondary to and later than the spread of permeation in the fascial plexus, its follows that the area of skin infected is small compared with the area of permeation in the deep fascia. The ablation of a very large area of skin is thus shown to be unnecessary, the removal of a large area of fascia, essential. Believing that operation in breast cancer is worth doing to avert the distresses of external ulceration, even though the disease subsequently returns in the internal organs, and believing also that the interests of the individual case in this matter should outweigh the desire of the surgeon for a favorable statistical record, Handley says has has not refused operation in any case when he thought he could prolong the patient's life or make her end more comfortable. Forty-eight per cent. of his patients, who could be traced have remained free from recurrence for three years in spite of the fact that in 90 per cent. of the cases of carcinoma which he sees enlarged axillary glands are present. Cutaneous recurrences have been reduced to a very low percentage. Handley has not seen any case of isolated axillary recurrence, nor of recurrence in the situation of the subclavian glands, and only one of recurrence in the remaining clavicular portion of the pectoral muscle. In some cases intrathoracic recurrence or return of the disease in the liver has taken place. In one case the first sign of return was in the femur on the side of the growth. The majority of recurrences belong to what may be called (*a*) the supraclavicular and (*b*) the intercostal types. No case of diffuse flap recurrence, the type formerly so common, was noted. Speaking of radium therapy for breast cancer, Handley says: The use of radium in breast cancer has, perhaps, never, apart from operation, resulted in the cure of the disease, and when it is applied to the surface of the skin, the maximum dose which the normal skin will tolerate is too small to deal effectively with any but immediately subcutaneous deposits. When a tube of radium is buried in the connective tissues, and at least half an inch away from the skin, a much larger dose can be given, and a 50 or even 100 mg. tube, screened with 1 mm. of platinum, can often safely be left in situ for twenty-four hours. Under these circumstances, and within a range of 1 or 2 inches, the local effectiveness of radium in destroying carcinoma cells greatly exceeds that of the hard roentgen rays which are its chief competitor. On the other hand, with the amounts of radium at present available, it is difficult or impossible to irradiate the whole of the extensive area, a circle 10 or 12 inches in radius centered in the primary growth, within which recurrence may take place. The peculiar advantage of radium when used in the most effective manner—by burying the tube in the tissues—is its intensive action. The peculiar advantage of roentgen rays is their extensive action. These considerations serve to map out broadly the respective spheres of these two methods of irradiation which can often be used effectively in combination. Roentgen rays are specially suitable for prophylactic irradiation covering a wide area, or for the treatment of multiple scattered deposits in the parietes. Radium should be chosen in preference if the recurrence is single of if the nodules are only present in one or several limited areas. Radium should certainly be preferred to roentgen rays provided that the affected area is not too large. Cases illustrating the use of radium in recurrent breast cancer are cited. Handley urges the importance of open air treatment, both for its prophylactic value against recurrence and in the more chronic varieties of inoperable cancer. In cancer, as in tubercle, the natural defenses of the body are to be found partly in the processes of inflammatory and fibrotic reaction.

Operation for Fistula of Stenson's Duct.—Chubb turns that portion of the skin containing the opening of the fistula inward after making a circumscribing incision, and sutures the edges of this flap to the edges of the divided mucous membrane of the cheek.

Epinephrin in Resuscitation from Apparent Death.—In about twenty cases of death from various causes, when all signs of life had ceased for several minutes, Walker has injected 1 or 2 minims of a 1:1,000 epinephrin chlorid solution directly into the heart muscle. A fine needle was passed through the fifth left intercostal space, just mesial to the lung resonance; the point was directed slightly inward and upward, and could be felt to enter the apex of the heart; when firmly imbedded in the muscle the injection was made. Several of these needle tracks were examined postmortem and in no case did it appear that any drawback would have ensued had the patient survived.

Massage of Heart.—The operation of gastro-enterostomy was largely completed when Coleman's patient stopped breathing. Artificial respiration was performed and breathing very soon started again, but the pulse was very weak. The operation was continued, but in a few minutes breathing stopped again, and the pulse could not be felt. Artificial respiration, strychnin, ether under the skin, hot cloths to the epigastrium were all tried without avail. The gloved hand was inserted in the abdomen through the operation incision and an attempt made to massage the heart through the diaphragm, but the heart could not be felt at all. Finally, after half an hour, during which time there had been no voluntary breathing and no pulse or audible heart sounds, direct massage of the heart was tried. After at least five minutes, the heart began to respond. Shortly after, on ceasing the massage for a brief period, a very small beat, feeling almost like a tremor, continued but only for a very short time. Pituitary extract, 1 c.c., was given, and soon after, on ceasing the artificial respiration the patient took one respiration himself, but did not continue. Again, later the heart continued to go for a brief time alone and the patient breathed again. Then he breathed twice in succession, later three times and so on till he twice breathed automatically, nine times consecutively, but did not continue. Also, the heart would not keep going for long if the massage were suspended. About a pint and a half of physiologic sodium chlorid solution was injected into a vein in the arm and more pituitary extract was given, but the breathing would not start again. The heart gradually grew weaker. It still responded to massage, but would only give one or two beats when left alone, till finally, nearly two hours after breathing first stopped, response failed and the case was given up.

Lancet London

Jan. 29, 1921, **1**, No. 5

Colectomy. W. A. Lane.—p. 207.
Legg's or Perthes' Disease. Differential Diagnosis of Affections at Hip in Children. H. B. Roderick.—p. 210.
Frequency of Latent Syphilis in Medical Department. E. H. Thaysen.—p. 213.
*Action of Quinin on Pregnant Uterus. H. W. Acton.—p. 216.
*Fatal Case of Infection with B. Enteritidis of Gaertner. J. W. McNee.—p. 218.
*Simple Procedure for Accurate Enumeration of Blood Cells and Bacteria, Without Use of a Counting Chamber. G. Dreyer.—p. 219.
Antimony in Treatment of Filariasis. G. C. Low and E. J. O'Driscoll.—p. 221.
Acute Ascending Paralysis, Occurring as Complication of Measles and Terminating in Recovery. C. R. Box.—p. 222.
Percentage and Fractional Dilutions. W. Fletcher,—p. 223.
*A Tri-Orchid. V. R. S. Ayyer.—p. 223.

Action of Quinin on Pregnant Uterus.—Quinin in certain concentrations cause contraction of both the longitudinal and circular fibers of the uterus. The effect produced, Acton says, depends on the concentration of quinin present. A concen-

tration of 1:44,000 produces a tonic spasm, which, if sustained, would cause asphyxia of the fetus from constriction of the placental sinuses. This concentration could only be attained if the patient was nearly poisoned by a large dose of quinin. As soon as the diagnosis of malaria is made, which is an urgent matter in pregnancy, quinin or quinidin should be given at once as the case requires. It is better to divide the doses into 2.5 or 5 grain doses, given every two or four hours. Twenty grains a day is sufficient and ample to control any attack of malarial fever. Acton insists on the employment of general methods for the prevention of miscarriage; viz., complete rest in bed and the judicious use of opium in allaying any mental excitement. When the child is dead or the miscarriage inevitable, quinin should be given in ordinary doses and the patient treated on general obstetric lines.

Fatal Gaertner Bacillus Infection.—Because of high fever, without pulmonary or intestinal symptoms, a provisional diagnosis of trench fever was made in McNee's case. Eight days later the patient suddenly had a "fit," and bit his tongue during the convulsion. Next day another convulsion took place. Twelve convulsions occurred within a few hours, and the patient became semicomatose. On the suspicion that the case might be cerebrospinal meningitis, lumbar puncture was carried out but the fluid was clear and contained no excess of cells. Signs of pulmonary involvement now developed, and within three days the base of each lung was consolidated. The patient died seventeen days after the onset of his illness. Since this case occurred at a time when influenzal bronchopneumonia was just beginning to be prevalent, associated at times with nephritis, a diagnosis of influenza suggested itself. At the necropsy, moreover, the macroscopic lesions in the lungs appeared typical of influenzal bronchopneumonia. A film of the bronchial pus, stained by Gram's method, showed the presence of numerous small gram-negative bacilli, which at first sight seemed entirely confirmatory of the influenza hypothesis. The organism appeared to be present in almost pure culture. Later, an examination of films from the spleen pulp showed an abundance of similar small bacilli. The organism proved to be a true *B. enteritidis* of Gaertner, the differentiation being confirmed by the requisite tests.

Enumeration of Blood Cells and Bacteria.—The procedure described by Dreyer, although based on the same general principles as Wright's method, differs in that it can be used to count not only bacteria but also human blood cells, and that the standard consists of a permanent suspension containing an exactly determined number of corpuscular elements per unit volume. The corpuscular elements selected for the preparation of the standard emulsion are the red corpuscles of the blood of a hen. The method is described in detail.

Tri-Orchid.—In Ayyer's case a third testicle was found above the left normal one, with a separate globus major and minor and a separate cord. The "testicular" feel over this gland was the same in every way as that of a normal gland.

South African Medical Record, Cape Town

Jan. 8, 1921, **19,** No. 1

Experiences of General Practitioner During Twenty-Six Years in Native Territories. F. W. Walters.—p. 1.
Fundus Oculi and Arteriosclerosis. J. S. Du Toit.—p. 6.
Prevention of Carcinoma of Uterus. A. S. Wilson.—p. 9.
Training of Milwives and Control of Midwifery Service. G. A. Darling.—p. 11.
Spontaneous Evolution of Full-Time Child. E. C. Crichton.—p. 12.

Archives des Maladies de l'Appareil Digestif, Paris

December, 1920, **10,** No. 12

*Cecum and Colon Stasis. P. Duval and J.-C. Roux.—p. 705.
Duodenal Feeding with Ulcer. M. Einhorn.—p. 745.
*Neoplasms at the Cardia. A. Hanns.—p. 754.
Glossomania. Surmont.—p. 758.

Cecum and Colon Stasis.—Duval and Roux study exhaustively the conditions and the radiograms of stasis in the ascending colon and cecum, with case histories of a large number of patients. They confirm the necessity for correcting conditions when the colon is found malformed, movable or surrounded with membranes, and the writers urge that such conditions should be rectified at every operation on the appendix in children. They advise solid fixation, and warn that removal of the pericolic membrane is sure to be followed by recurrence, unless this is prevented by wrapping the bowel in a free flap of omentum. This prevents adhesions and "gun-barrel kinking" of the bowel. With simple movability of the right colon, fixation to the psoas parvus is usually all that is necessary. When there are signs of pericolitis, the free flap of omentum is indispensable after removing the pericolic membrane. They warn that postoperative medical treatment is indispensable, especially as the patients, finding themselves cured, are apt to be careless in their diet. They give details for a diet of carbohydrates with considerable butter and little putrescible protein; this should be kept up for several months.

A Neoplasm at the Cardia.—Hanns describes as an aid in the diagnosis the peculiar contortions which allowed the man of 57 to pass the food into the stomach when it was arrested by the extensive tumor at the cardia.

Archives Médicales Belges, Liége

October, 1920, **73,** No. 10

*Syphilitic Psychoses. C. Dubois.—p. 819.
*Treatment of Fractured Long Bone. Van der Elst.—p. 824.
Duration of Immunity to Influenza. A. Colard.—p. 835.

Syphilitic Psychoses.—Dubois reports two cases of acute maniacal psychosis; in one the symptoms suggested general paresis and in the other manic-depressive delirium. In both the syphilis was of less than a year's standing. The improvement and recovery under arsphenamin coincided with the improvement of the findings in the blood, confirming the syphilitic nature of the mental disease. Both the men had been given treatment, one irregularly, but the other a systematic course. Dubois adds that he encountered a similar case several years ago, before the discovery of arsphenamin, in which the cure was soon complete under intensive mercurial treatment. The medication in all these cases was borne without harm.

Treatment of Fractured Long Bone.—Van der Elst gives an illustrated description of his method of reconstructing the bone by belting it with a metal band with a hole at each end. First he applies to the bone a plate with two or three short, pointed projections below, which cling to the bone and prevent slipping. The strip of metal is then passed around the bone, the ends closed above the plate, and a screw without sharp tip is passed through the superposed holes in the ends of the strip. As the screw is turned, the closed ends of the metal strip are drawn up higher and higher, thus belting the bone tighter. As soon as consolidation is complete, the encircling metal strips are withdrawn.

Bulletin de l'Académie de Médecine, Paris

Jan. 11, 1921, **85,** No. 2

*Incomplete Valvular Stenosis of the Esophagus. J. Guisez.—p. 61.
*Fracture of Neck of Femur in the Elderly. H. Judet.—p. 63.
Importance of Amino Acids and of Saturated Acids in Metabolism. A. Blanchetière.—p. 66.
Frequency of Latent Forms of Continuous Hypersecretion. L. Pron.—p. 68.

Incomplete Valvular Stenosis of the Esophagus.—Guisez explains that many cases diagnosed as spasm of the esophagus are in reality due to a valvular obstruction. The roentgen ray may show nothing wrong, as the contrast suspension works its way into the stomach. But esophagoscopy reveals a semilunar valve partially closing the esophagus, and always found at the same spot, on a level with the opening in the diaphragm. Food is retained more or less at this point, and sets up irritation, increasing the spasm, which is only secondary. Most of these patients had been classed as requiring treatment of severe essential spasm. But this brought no relief. Treatment should soothe the irritation by restriction to fluid food, not allowing milk, as this clots above the stenosis, rinsing out the esophagus with an alkaline supplemented by measures for dilatation, and for circular electrolysis of the valve formation. In the five cases described this treatment put an end to all disturbances.

Fracture of the Neck of the Femur in the Elderly.—Judet applies a plaster cast to include the pelvis and knee and hold

the leg in abduction, whether the fracture is intracapsular or extracapsular. In the four patients described the pain ceased at once after the immobilization. The cast is applied to hold the patient in the sitting posture, the knee flexed, which is convenient and comfortable, and the anatomic and functional results were excellent.

Bulletin Médical, Paris

Dec. 4, 1920, **34**, No. 57-58

Minor Signs of Syphilis. R. Sabouraud.—p. 1083.
Iridectomy to Improve Vision. A. Cantonnet.—p. 1085.

Jan. 1, 1921, **35**, No. 1

*Sacralization of Fifth Lumbar Vertebra. L. Delherm and Thoyer-Rozat.—p. 6.

The Sacralization of the Fifth Lumbar Vertebra.—A number of illustrations are given of the complete or partial fusion of the fifth lumbar vertebra with the sacrum. The roentgen rays have demonstrated the mechanical cause responsible for many rebellious cases of pain in the lumbar and sacral region and below. There are absolutely no other symptoms except the pain, and the deformity is not inevitably accompanied by pain. Seven different types are described, and the necessity emphasized for roentgen examination in every case of pain in this region.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 17, 1920, **44**, No. 39

Epidemic Hiccup. C. Achard and J. Rouillard.—p. 1534; Idem. L. Rivet.—p. 1541.
*Chronic Trophedema with Sacrum Anomalies. A. Léri and Engelhard.—p. 1538.
Study of Oscillometer Pulse Findings. Mougeot and Petit.—p. 1544.
*The Thyroid in the Tuberculous. Coulaud.—p. 1551.
*Staphylococcus Meningitis. L. Lortat-Jacob and M. Grivot.—p. 1555.
Epidemic Encephalitis: Pathologic Anatomy. Achard and Foix.—p. 1560.
*Bilateral Successive Pneumothorax. R. Burnand.—p. 1569.
*Brain Tumor. E. Lenoble, Baumier and Dujardin.—p. 1577.
Pigmentation in the Mouth. H. Roger.—p. 1580.
*Gallop Rhythm in Children. A. d'Espine.—p. 1585.
*Fluid in Fasting Stomach. G. Hayem.—p. 1590.

Chronic Trophedema.—Léri and Engelhard present three cases of chronic trophedema in one leg, explained by roentgen-ray examination as due to retrogressive changes in the sacrum, a sacral spina bifida.

The Thyroid in the Tuberculous.—Coulaud states that he has found the thyroid normal at necropsy of patients with acute tuberculosis, or it showed merely a tendency to hyperplasia. There does not seem to be anything which suggests functional thyroid inferiority in the tuberculous. In the majority of the chronic cases there seems to be a sort of struggle between sclerosis and hyperplasia. Only in the cases of cured tuberculosis was sclerosis alone found.

Staphylococcus Meningitis.—In the two cases described, the young women a few weeks after childbirth developed mastoiditis with tendency to meningitis. Both recovered under vaccine treatment. This encourages prompt vaccine therapy in diffuse staphylococcus meningitis connected with otitis, instead of waiting for signs of mastoid involvement.

Bilateral Induced Pneumothorax.—Burnand found that the compressed lung after three years of artificial pneumothorax expanded practically normally, resuming its functions. After five months of this, the other lung showed such disturbances that a pneumothorax was induced on this other side. Forlanini has reported two cases of this successive bilateral pneumothorax. In one the lung had been compressed for eight years. The conclusions from these cases are that the successively bilateral pneumothorax had better not be attempted except in very unusual circumstances. It generally entails more or less interference with breathing, and the patients do not long survive.

Brain Tumor.—The man of 50 presented symptoms which suggested lethargic encephalitis, but the lumbar puncture fluid showed a histologic reaction on the part of the meninges, with numbers of red corpuscles in the puncture fluid, but not enough to tint the fluid.

Gallop Rhythm in Children.—In d'Espine's two cases the gallop sound was heard on the left side in one and on the right side in the other; both in boys of a little over 3 with normal kidneys. In the left case the child died in ten days from a recurring rheumatismal heart disease. The other child recovered, but the gallop sound seems to be permanent with the hypertrophied heart.

Fluid in the Fasting Stomach.—In this second part of Hayem's study of this subject he enumerates the principal causes of hypersecretion and retention that may be responsible for the presence of fluid in the fasting stomach.

Gynécologie et Obstétrique, Paris

1920, **2**, No. 5

*Retinitis in the Pregnant. A. Couvelaire.—p. 305.
*Traumatism of the Genitals in Women. P. Séjournet.—p. 318.
*The Pelvis After Hip-Joint Disease. L. Cleisz.—p. 353.
*Reconstruction of Perineum. L. Imbert.—p. 364.

Retinitis in the Pregnant.—Couvelaire reports two cases in which the retinitis developed in the first half of pregnancy in previously healthy women. There was no edema or uremia. He emphasizes that in such cases, not responding promptly to medical treatment, even when there is no hyperazotemia the pregnancy should be terminated at once. Nothing but the removal of the ovum—at least in the immense majority of cases—will arrest the toxic condition and allow recuperation of the organs if this is possible. The future of women in this class is dubious; recurrence in later pregnancies is frequent, but not inevitable. When it occurs, it is liable to prove fatal. In a compilation of twenty-three cases nine of the women died during or soon after another pregnancy, and five developed blindness during a later pregnancy. In five other cases there was recurrence but the women recovered; in two in this group the pregnancy was artificially interrupted. In only five in this group of twenty-three was there no return of the retinitis, but in two of these cases there was albuminuria. These figures warn against allowing later gestation as a rule, or at least not until after complete return of health and especially of normal kidney functioning. During the new gestation, from the very first the woman should be given treatment as if for chronic kidney disease, and if there is the slightest sign of ocular disturbance, the pregnancy should be interrupted at once. It is better to have the woman examined frequently by an ophthalmologist, without waiting for symptoms of the retinitis.

Traumatism of the Genitals in Women.—Séjournet summarizes from the literature over 100 cases of trauma of sexual origin, including some cases in his service—a total of 110 cases classified by the various forms of the injury. The list includes three cases of fatal hemorrhage from the hymen on the wedding night; one of theses women was of a hemophilic family.

The Pelvis After Hip-Joint Disease.—Cleisz reports the results of study of coxalgic pelves, including both adults and children. The ilium was always found more or less atrophied, but the line of the innominate beyond is as long or longer than that of the sound side.

Flap for Correction of Perineum.—Imbert's illustrations show his effectual method for reconstructing the perineum after complete laceration from the anus to the vulva. He makes a transverse incision between the anus and vulva and cuts a flap on one side of and to the rear of the anus, commencing at the tip of the transverse incision. This flap is twisted around and sutured across to the lips of the transverse incision. This broad thick flap is well nourished, and one of the three women he has treated in this way has passed through two pregnancies since.

Paris Médical

Jan. 8, 1921, **11**, No. 2

*Thyroidectomy. P. Sebileau.—p. 33.
*Abuse of Gymnastic Exercises. Joland.—p. 37.
*Jaundice After Arsenical Treatment of Syphilis. A. Policard and J. Pinard.—p. 42. Idem. G. Milian.—p. 43.

Thyroidectomy.—Sebileau describes the anatomic and the clinical features that have to be taken into account in removing the thyroid.

Abuse of Gymnastic Exercises.—Joland raises a warning voice that children are put at gymnastic exercises too young or they are worked too hard in them, describing several cases to show the injury liable.

Jaundice After Arsenical Treatment of Syphilis.—Policard and Pinard report the case of a man of 28 who developed acute yellow atrophy of the liver, fatal in six days, several weeks after a course of neo-arsphenamin treatment for old syphilis. Necropsy showed 80/1,000 mg. of arsenic in 100 gm. of liver tissue, while the normal proportion is at most 5/1,000 mg.

Milian comments on this case that the jaundice did not develop until fifty days after the neo-arsphenamin had been given in three doses to a total of 1.05 gm., and he thinks that the jaundice could not possibly be attributed to the drug directly. He says that there is no known instance of a mineral or organic poison waiting for several weeks before manifesting its effects. In ten years of experience and large numbers of cases he has found that renewed treatment with the drug cured the jaundice in such cases when given at once. He has had sixty cases of the kind in the last two years, the jaundice developing several weeks after the arsenical treatment. All were rapidly cured by renewed administration of the drug. A strange poison, he adds, which lets the patients get well when it is being administered and which lets them die when there has been an interval since its administration.

Jan. 15, 1921, **11**, No. 3

*Removal of Goiter. P. Sebileau.—p. 49.
*Diagnosis of Tuberculosis in the Elderly. G. Ichok.—p. 58.
Intraspinal Treatment of Neurosyphilis. ("Rachisérumsalvarsanothérapie.") D. E. Paulian.—p. 59.

Jan. 22, 1921, **11**, No. 4

The Sources of Therapeutics. H. Vaquez.—p. 65.
An Operation for Bullet Wound of the Heart: Death from Intrapleural Hemorrhage. J. Quénu.—p. 76.

Removal of Goiter.—Sebileau gives seventeen illustrations of his technic, saying that the operation of goiterectomy by this means is extremely benign. Whatever the size of the goiter or its variety or its age, the operation is no more dangerous than the most harmless of surgical interventions. He never drains.

Fixation of Complement in Diagnosis of Tuberculosis in the Elderly.—Ichok comments on the advantages of this test for revealing pulmonary tuberculosis in the elderly when the appearance of health, or at least of resistance, prevents suspicion of the tuberculous nature of the "bronchitis." An elderly governess in a healthy and wealthy family was probably responsible for the deaths from tuberculous meningitis of three of the children in an instance related.

Presse Médicale, Paris

Jan. 15, 1921, **29**, No. 5

Reconstruction of Fractured Elbow. Lenormant and Lebrun.—p. 41.
The Schick Reaction. P. Armand-Delille and P.-L. Marie.—p. 43.
Dental Caries in the Tuberculous. P. Fargin-Fayolle.—p. 44.
*Migraine. P. Pagniez.—p. 45.

Migraine.—Pagniez refers to his own work in prophylaxis of migraine by systematic ingestion of a little peptone before each meal, as has been described in these columns. He then summarizes Didsbury's treatment, which has also been summarized here. He further quotes the work of Bouché and Hustin in curing the tendency to migraine by injections of horse serum or crotalin. The reactions to these measures modify conditions so that the tendency seems to die out. One of their patients was a woman of 31 who had had migraine for ten years accompanying each menstrual period. She was given weekly injection of 1 c.c. of horse serum for two months and later twice a month for two months. The tendency to migraine seems to be entirely conquered. They have had six cures and four with improvement in their eleven cases, and one failure. Pagniez thinks that these three types of treatment may be useful in different cases.

Jan. 19, 1921, **29**, No. 6

*Latent Mastoiditis. H. Luc.—p. 53.
*The Prognosis of Pulmonary Tuberculosis. E. Arnould.—p. 54.
*Dilution Unit in the Wassermann Test. E. Peyre.—p. 56.

Latent Mastoiditis.—Luc describes a form of mastoiditis which he says "bites without barking." The inflammation extends into the antrum but so long as the opening is free there are no symptoms, no tenderness. The only sign of this latent mastoiditis is the persistence of the discharge. In one case after seven weeks of acute otitis came a chill and high fever, and the immediate operation did not ward off the promptly fatal termination. In another case when three weeks had passed with still profuse suppuration, he warned the patient that if there was no improvement in another week he would operate. He found a vast cavity filled with pus and the lateral sinus protruded and was laved by the pus showing the menace that had been averted by the operation. He accepts four weeks as the limit; the operation not only averts threatening danger but cures the interminable otitis.

The Prognosis of Pulmonary Tuberculosis.—Arnould concludes from extensive experience and study of the literature that the prognosis of pulmonary tuberculosis is graver when it develops in a previously healthy person who had not been exposed before to repeated infections. The disease will be less grave in the children of the tuberculous, and the prognosis will be rather favorable in a large number of cases of healed tuberculosis.

Dilution Unit in the Wassermann Test.—Peyre determines the smallest amount of serum which will induce the positive reaction, calling this 1/10 as the unit. He dilutes the serum with physiologic saline (9/1,000). When the reaction is positive at 1/40 he calls this 4 units; at 1/100, 10 units; at 1/200, 20 units. By this method of dilutions it is possible to record with precision the reaction by the number of units.

Progrès Médical, Paris

Dec. 18, 1920, **35**, No. 51

*Puberty in the Abnormal. G. Paul-Boncour.—p. 551.
Review of the Clinics of the Week.—p. 554.
*Medical Syndicates. Garçon.—p. 556.
The Present Status of Biology. P. Girard.—p. 558.

Dec. 25, 1920, **35**, No. 52

Grave Forms of Malta Fever. H. Roziès.—p. 563.
Present Status of Surgical Tuberculosis. A. Broca.—p. 565.
Diagnosis of Spirochetoses. A. Sartory.—p. 566.

Puberty in the Abnormal.—Boncour comments on the necessity for noting the course of puberty as a sign of abnormal conditions in children. Precocious puberty generally coincides with sexual precocity and perversions, but over 60 per cent. of the abnormal have very late puberty. They should be classed by their physiologic rather than their chronologic age.

Medical Syndicates.—Garçon summarizes the peculiar laws in France governing the association of physicians. The "syndicates" can be only among members of a single profession, but the "associations" are free to take in others. He describes also the arguments for and against a tribunal of honor.

Revue Franç. de Gynécologie et d'Obstét., Paris

October, 1920, **15**, No. 10

*Tuberculous Adnexitis. J. Mouchotte.—p. 397.
*Technic for Ligating Umbilical Cord. A. Brisset.—p. 421.

Tuberculous Adnexitis.—Mouchotte gives an illustrated description of a case of tuberculous pyosalpinx. He removed the tuberculous tube, leaving the other tube in place although it showed slight tuberculous lesions. The woman was young and otherwise apparently healthy, and he regards this tubal tuberculosis as primary. Recent compilations show the relative rarity of tuberculous adnexitis and the difficulty of a differential diagnosis. None of the symptoms from the adnexa are characteristic. In his case there were no general signs, no fever, no pain until toward the last and only under the influence of some occasional cause. Palpation revealed a small soft tumor, slightly tender, in one of the culdesacs. The possibility of tuberculous adnexitis should be borne in mind and the blood examined for mononucleosis, the tuberculin tests applied, and perhaps inoculation of guinea-pigs with secretions from the cervix.

Ligation of Umbilical Cord.—Brisset refers to a cord containing large amounts of Wharton's gelatin. As this dries out, the ligature is liable to slip. Brisset twists four or six threads together, tying a knot in the center. One half of the cord thus formed is separated into two strands, and these two strands are tied around the cord. The ends of these strands and the other end of the cord are then tied together across

the top of the cut end of the cord. By this means it is impossible for the ligating cord to slip off. The article is ilustrated.

Revue de Médecine, Paris

October, 1920, **37**, No. 11

Forms of Anemia with Cancer. J. Rieux.—p. 505.
*Pituitary Polyuria. E. Schulmann and R. Desoutter.—p. 520. Con'n.
*Ulcer of Lesser Curvature. A. Monprofit and R. Thouvenin.—p. 553.

Pituitary Polyuria.—In concluding this long study of diabetes insipidus, Schulmann and Desoutter list among the direct causes traumatism, intoxications, infections and emotions, besides tumors. They state that 85 per cent. of the cases on record were in the young under 20. Cozzolino has reported a case in a babe of 2 months and Deluca in one of 3. The pituitary seems to be peculiarly unstable during childhood and at puberty, but diabetes insipidus has been encountered also in the elderly. Lancereaux has published eleven cases of hereditary transmission of diabetes insipidus, and van de Heidjen ten cases. Marañon has reported a family in which the father had acromegaly and the son diabetes insipidus and glandular insufficiency. Extract of the posterior lobe of the pituitary is unquestionably the most effectual treatment at our command to date, they reiterate. But it probably does not definitely modify the prognosis of diabetes insipidus. It reduces or abolishes completely the two most distressing features of the disease, the tormenting thirst and the indefinable malaise which prevents sleep. The harmlessness of this treatment allows it to be kept up a long time, possibly giving it by the mouth for a week or two occasionally in place of the intramuscular injections. Pituitary treatment may likewise act on other manifestations of secretory insufficiency, and it may sometimes be usefully reenforced with thyroid or suprarenal extract. They condemn any reliance on dieting or on drugs to act on the nerves.

Ulcer of the Lesser Curvature.—Monprofit and Thouvenin emphasize as early features of ulceration in this region of the stomach the marked intermittency of the symptoms and the peculiar intensity of the pain. The tender point in the epigastrium has to be sought with one finger, palpating very gently, and it is always found at the same spot, on or a little to the left of the median line, in the intervals between spasms of pain, before perigastritis has developed. The pains are mostly on the median line and quite high, and they do not radiate to the back but along the left costal arch and back of the sternum, sometimes suggesting angina pectoris. Digestion, not the contact with food, is what starts the spasm of pain, and the pains are liable to begin a half hour or hour after the end of the meal and persist until the stomach is at rest. Then there is no further pain. The pains may be relieved by sodium bicarbonate, which not only neutralizes the acidity but distends the stomach wall by the gases generated. Vomiting and change of position also relieve the pain. One patient obtained relief only in the knee-chest posture. Ulcers of the lesser curvature seemed more inclined to bleed than others, in their experience. Hematemesis as the first manifestation of a hitherto latent ulcer points almost decisively to the lesser curvature. Ulcers here are exceptionally inclined to manifest and occult hemorrhage.

Schweizerische medizinische Wochenschrift, Basel

Jan. 13, 1921, **51**, No. 2

*Diagnosis of Ulcer on Curvature of Stomach. W. Geilinger.—p. 25.
Treatment with Non-Specific Vegetable Albumin. A. S. Horovits and E. Zueblin.—p. 34.
*Heart Disease and Altitude. W. H. von Wyss.—p. 36.
Intestinal Lipoma: Two Cases. E. Forster.—p. 40.
Gastric Secretion Not Influenced by External Factors. M. Lüdin.—p. 41.

Gastric Ulcers Distant from the Pylorus.—Geilinger states that in Kummer's compilation of 862 cases of ulcer, 22.97 per cent. were in the lesser and 1.62 per cent. in the greater curvature; 58.34 per cent. were close to the pylorus. In his own seven cases there had been symptoms for six or seven years, and only one of the patients was a man. In the first years the ulcer pain came on immediately after eating. (Suggestion by the physician as to this must be guarded against.) None had pains during the night. The pain never started on the right side. There was vomiting in each case; it came on immediately after eating, with very painful spasm of the cardia. The vomit was small in amount and had no acid taste. Posterior perigastritis develops early and is probably responsible for the severity of the pains, and probably also for the mechanical hindrance to the motor functioning. There was visible bleeding in 43 per cent. The ulcers were large, hard and had bored deep into the tissues. Gastric acidity was always normal or below; this finding confirms the accumulating evidence that hypersecretion is not characteristic of any type of gastric ulcer, either as symptom or causal factor, although hyperacidity is found with about two thirds of the cancers near the pylorus. Gastro-enterostomy does not relieve these "curvatural ulcers"; circular resection was applied in six of the seven cases and the Billroth II in the other. One patient died from postoperative complications, but the results in the other cases are excellent.

Altitude and Heart Disease.—Wyss expresses surprise that more attention is not paid to the benefit from a mountain climate in many forms of heart disease. He describes those for which it is not adapted including persons with nephritis and arrhythmia, but simple valvular defects with perfect compensation may be favorably influenced by a stay in the mountains, as also mitral and aortic defects of infectious origin, but without dyspnea, dilatation or stasis. Another group in which the exercise and the training are of benefit is Lewis' "effort syndrome." Wyss ascribes great influence to the feeling of exhilaration and energy which is experienced from the grandeur of the scenery. The reserve power of the heart is greater than is generally accepted, and this can be trained in the mountains. He does not think it necessary to reach the altitude by degrees, but goes at once to the desired point, up to 2,000 meters. It is imperative however, to have the patient keep absolutely still for a time, a regular course in a reclining chair. This will then show what the heart is capable of. Chronic disturbance in conductivity, unless extreme, is not a contraindication to altitude. With paroxysmal tachycardia, the beneficial influence of the mountain climate testifies to the nervous factor in the syndrome. This general strenghthening of the nervous system and the effects of the sunlight are probably responsible for the favorable influence in some cases of exophthalmic goiter. In cardiac neuroses, it is difficult to exclude those of vasomotor origin, for which toxic factors may be responsible.

Pediatria, Naples

Jan. 1, 1921, **29**, No. 1

*Vasoconstricting Substance in Blood in Rachitis. O. Cozzolino.—p. 1.
*Intracranial Hemorrhage in the Newborn. R. Vaglio.—p. 12.
Roentgen-Ray Findings in Acute Respiratory Disease in Young Children. C. L. Rusca.—p. 19.

No Vasoconstricting Substances in Blood in Rachitis.—This is Cozzolino's conclusion from his exhaustive study of seventeen rachitic children. The number examined was larger than this, but the blood of these was investigated by its action on the frog.

Intracranial Hemorrhage in the Newborn.—Vaglio quotes the remark that the mortality is higher on the day of birth than on any other day that humanity has to meet, some estimating that fully 5 per cent. of childbirths end in the death of the child, and that another 1 per cent. die within a few days from obstetric injuries. The low vitality of the prematurely born may be due more to the trauma of the delivery than to the immaturity of the child. Intracranial hemorrhage is the principal harm that results, and this may entail symptoms from the first or not until after a few days. In either event the extravasated blood should be evacuated, and he cites a few clinicians who have done this successfully. He then reports a case from his own practice in which an apparently healthy child of healthy parents the second day after birth developed slight convulsive movements of head and eyeballs which soon spread to include various groups of muscles in trunk and limbs. Extreme collapse followed a hot bath, requiring an injection of camphorated oil and epinephrin internally. Lumbar puncture showed blood in the fluid, with corpuscles and xanthochromia. Improvement followed at once, and the child is now 6 months old, the picture of health. Hot baths and breast milk, fed with a spoon, were the main reliance. The course of the case indicated that the hemor-

rhage had not been large, the symptoms being due more to the high pressure in the cerebrospinal fluid. The child had presented a slight tendency to jaundice which may have been responsible for the xanthochromia.

Jan. 15, 1921, **29**, No. 2

*The Brain in Case of Mongoloid Idiocy. O. Cozzolino.—p. 49.
*Connection Between Congenital Anomalies and Inherited Syphilis. S. de Stefano.—p. 59.
*Epidemic Scurvy. E. Giorgi.—p. 66.

The Brain in a Case of Mongoloid Idiocy.—Cozzolino states that of the twenty-three cases of mongoloid idiocy he has encountered, eighteen were in males and in several instances there was familial occurrence. The brain in the case described was small and asymmetrical, and showed defective development of all the pallium, the cerebral cortex or brain mantle.

Congenital Anomalies and Inherited Syphilis.—De Stefano has been investigating all the cases of congenital malformations observed at the dispensary connected with the Naples children's clinic, and tabulates them with the findings in regard to any connection with syphilis. They show an overwhelming preponderance of syphilis in the antecedents in all except spina bifida; in this only 9 of 23 cases showed signs of syphilis. The findings were negative also in the one case of hypospadia, one case of congenital cyst in the neck, and one case of exstrophy of the bladder. Signs of syphilis were manifest in 50 of the 54 cases of hydrocephalus; in 27 of the 32 cases of congenital heart disease; in 59 of the 69 with hypothyroidism; in 34 of the 46 cases of mongolism, and 15 of the 17 with pluriglandular syndromes.

Epidemic Scurvy.—Giorgi has been in charge of a foundling's asylum at Venice since 1904, and relates several instances there of epidemics of scurvy from a one-sided diet. He adds a description of an epidemic of scurvy observed in the hospital dispensary, in the hospital, and in private practice, and still prevailing. The ten children are from 6 to 14 months old. The epidemic coincided with the introduction of condensed milk, fresh milk being practically unattainable.

Policlinico, Rome

Jan. 3, 1921, **28**, No. 1

*Determination of Gastric Digestive Juices by Michaelis' Method. R. Bosisio.—p. 3.
*Dermatitis from Arundo Donax. P. Timpano.—p. 6.
Case of Ludwig's Angina in a Hemophiliac. G. Feliciangeli.—p. 8.
Caustic Action of Argirina in Urethra. G. Piccardi.—p. 10; Idem. Fasani-Volarelli.—p. 11.
The Campaign Against Tuberculosis in France and Belgium. G. Mendes.—p. 12.

Estimation of Gastric Digestive Juices by Michaelis' Method.—Bosisio tabulates the findings of pepsin and rennet in the stomach content of thirty-five patients and in the healthy, and emphasizes the simplicity and ease of Michaelis' technic and the characteristic findings in malignant and other disease of the stomach. The pepsin unit is that contained in 1 c.c. of a 1:15 solution of normal gastric juice; the rennet unit that contained in 1 c.c. of a 1:60 solution of the same. For convenience, Bosisio used 1 c.c. of commercial pepsin in a 3 per cent. solution and 2 c.c. of a 1:500 solution of commercial rennet for the units.

Dermatitis from Arundo Donax.—Timpano found that the black powder on the leaves of old plants is the cause of the dermatitis, and will reproduce it in animals.

Jan. 10, 1921, **28**, No. 2

*Biologic Tests of Echinococcus Disease. P. Luridiana.—p. 41.
Propyl Alcohol in Surgical Therapeutics. V. Pleth.—p. 44.
*Gastroptosis. E. Cavazza.—p. 47.
Vaccination in Rural Districts. M. Gioseffi.—p. 50.

Biologic Tests for Echinococcus Disease.—Luridiana states that the intradermal reaction and complement fixation tests of echinococcus disease are the most reliable, but neither is always positive. It is advisable therefore to combine the two. In his ten cases, one test was sometimes positive when the other gave negative findings, and vice versa.

Gastroptosis.—Cavazza tries to fatten the patient to aid in keeping the stomach in place, and promotes the latter by appropriate posture and by the wearing of a supporting band. He has the patient lie on the right side after each meal to promote the evacuation of the stomach, and has the food taken in five small meals, ingesting as little food as possible. He gives the outline for the diet which he has found most effectual, keeping the patients in bed during the entire course of treatment. They frequently increased 5 kg. in weight during the stay in bed.

Riforma Medica, Naples

Dec. 18, 1920, **36**, No. 51

*Fatigue as a Test of the Tuberculous. V. Pietroforte.—p. 1169.
*Cardiovascular Symptoms of Horner's Syndrome. A. Roccavilla.—p. 1170.
*Serum Sickness and the Hemorrhagic Diathesis. G. M. Neirotti and F. Viola.—p. 1175.
*Implantation of Sex Glands. R. Falcone.—p. 1177.
Diaphragmatic Hernia. E. Aievoli.—p. 1180.

Fatigue as a Test of the Tuberculous.—Pietroforte explains that when the resisting powers are low, under the influence of fatigue the organism uses up its nitrogenous reserves and finally the albumin of its own tissues. By testing the reaction to fatigue, it is possible to determine the lowering of the nitrogenous reserves, and this drain on the tissues by investigating the intermediate nitrogen metabolism in the blood and the changes in weight of the body. This has been worked out at Maragliano's clinic by Sivori, and has formed a reliable means of ascertaining the resisting powers in the tuberculous to aid in allowing exercise or self-support and in estimating the effect of treatment. For practical purposes it is sufficient to record the changes in weight. For this the patient is kept in bed in absolute repose for ten days, with a diet of from 2,200 to 2,300 calories, including from 90 to 100 gm. of protein. The diet is kept at a constant figure, and every day at the same hour the weight is recorded. By the sixth day if the weight remains stationary or has increased, the patient can get up and take a daily walk of 2 km., for a ten day period. If the weight diminishes, there is little hope of organic resistance. If it remains stationary or increases, the walk is increased to 4 km. for another five days. If the weight diminishes then, we can assume a slight margin of resistance. If it does not diminish during this time nor in another five day period, other conditions equal, we can say that the individual has a good margin of organic resistance, and is capable of responding to specific treatment which requires the active participation of the organism.

Cardiovascular Symptoms with Paralysis of the Cervical Sympathetic.—Roccavilla describes four cases of Horner's syndrome.

Protein Shock in Treatment of Hemorrhage.—Neirotti and Viola report two cases of persisting hemorrhages after a minor operation, finally arrested by the anaphylactic shock from subcutaneous injection of normal horse serum, eighteen hours after a preliminary injection of 10 c.c.

Gonad Grafts.—Falcone implanted half of the testicle of a sheep in the abdomen of four men of 53, 63, 69 and 74. The operation was done early in October, and the grafts were cast off as foreign bodies in two or three weeks in all but one case; in this case the graft seems to have grown in place. He regards the implant as a form of organotherapy. The cytolysins set at liberty exert an actual power as a secretion, and the stimulation resulting therefrom seems to be permanent to date. He says that suggestion can be excluded, the men not knowing the purpose of the implantation. The general effect was good in all and the testicles in all increased in size.

Rivista Critica de Clinica Medica, Florence

Dec. 5, 1920, **21**, No. 34

Fatal General Poisoning from Mercuric Chlorid Tablet in the Vagina. A. Cazzaniga.—p. 397.

Archivos Españoles de Pediatría, Madrid

December, 1920, **4**, No. 12

*Kala-Azar in Madrid. J. García del Diestro and N. González Barrio.—p. 705.
Apportionment of Time for School Children. C. S. de los Terreros.—p. 726.

Kala-Azar in Madrid.—It is evident from the three cases described that kala-azar is endemic in Madrid. The two infants, 14 and 20 months of age, died, but a third infant of 13 months recovered under systematic treatment, first with antimony and potassium tartrate by the vein and later with intramuscular injection of another antimony preparation.

Diestro is well acquainted with the disease, having studied it in Sicily and Tunis; other cases may have escaped detection.

Brazil-Medico, Rio de Janeiro

Nov. 13, 1920, **34**, No. 46

*Splenectomy in Treatment of Cirrhosis of the Liver. O. Clark.—p. 747.
Transmission of Myxoma to Rabbits by Fleas. H. de Beaurepaire de Aragão.—p. 753.
*Mercurial Treatment of Stomach Disease. J. Godoy Tavares.—p. 754.
War Psychoneuroses. A. Lellis.—p. 756.

Splenectomy for Cirrhosis of the Liver.—This lecture from the course on clinical medicine mentions parenthetically a case of splenomegaly with anemia, leukopenia, intermittent fever and symptoms suggesting leukemia. The spleen measured 25 cm. in diameter. Notwithstanding the complete absence of signs of syphilis, Clark gave tentative mercurial treatment and the spleen promptly subsided to normal size as the other symptoms disappeared. Symptoms returned later two or three times, but they were banished anew by mercurial treatment.

Mercury in Nonsyphilitic Stomach Disease.—Godoy Tavares has been urging for some time the advantages of mercurial treatment of stomach disorder even in the absence of active syphilis and with negative Wassermann reaction. He cites here three instructive cases given mercurial treatment although there was nothing to suggest syphilis at the time. He ascribes the action of mercury to the modification of the contents of the digestive tract; it increases secretion of digestive juices and promotes motor functioning. This treatment he explains is not for organic lesions but for gastralgias of reflex or other origins. In fourteen of the thirty-four cases in which he has derived benefit from this treatment there was probably no syphilitic taint. In one of the cases he describes, the mercurial treatment for secondary syphilis put an end to pains in the stomach from which the man had suffered from childhood. In one man with a history of gastralgia for twenty years, a single injection of mercury cured the pain in one hour. A few other injections were given later and he has had no return of his gastralgia.

Nov. 27, 1920, **34**, No. 48

*Action of Temperature on Rapidity of Formation of Experimental Edema. M. Ozorio de Almeida.—p. 789.
*Medicolegal Tests of Spots of Vernix Caseosa. O. Freire and F. Favero.—p. 790.
Case of Vernet's Syndrome. P. Mongabeira Albernaz.—p. 792.

Temperature and Experimental Edema.—Experiments on frogs showed that the induced edema developed much more rapidly when the limb was placed in hot than in cold water.

Medicolegal Test for Vernix Caseosa.—The greasy spot is dissolved with xylol and is then stained with iodin, or a phenolized iodized xylol can be used. Ether or benzine are less effectual than the xylol.

Dec. 11, 1920, **34**, No. 50

Involution Psychoses. H. Roxo.—p. 821.
Leeches as Intermediate Hosts of Trematodes. C. Pinto.—p. 824.
Case of Anarthria. Teixeira Mendes and Gonçalves Guerra.—p. 825.

Dec. 18, 1920, **34**, No. 51

Present Status of Tuberculosis. O. Clark.—p. 837.
Present Status of Cancer. A. F. da Costa Junior.—p. 842.

Dec. 25, 1920, **34**, No. 52

Surgical Treatment of Strabismus. G. de Andrade.—p. 859.
*Primary Chancre on Chin. T. de Almeida.—p. 864.

Extragenital Syphilitic Chancre.—De Almeida gives an illustrated description of a case of a large ulceration on the chin, containing *Spirochaetae pallidae*. The man of 30 was in the habit of being shaved at a certain barber shop, and de Almeida examined the barber, but found no signs of syphilis. He tabulates the extragenital primary chancres that have been recorded at Rio and by Fournier and Gaucher at Paris. At Rio the total number at three separate clinics is 163, but the list includes only three in the shaving area. In the total number of extragenital primary lesions at Rio, all efforts to trace the infection to its source were unavailing in 50 per cent. of the cases. The rarity of barber's chancre is evidently due to the inability of the spirochete to stand exposure to the air and light or the action of soap. He quotes Metchnikoff to the effect that the spirochetes succumb to a temperature of 45 or 50 C. The chin chancre scabs over at first, then grows spongy and then becomes an open cavity. More than 50 per cent. of all extragenital chancres are at the mouth.

Revista Médica del Uruguay, Montevideo

December, 1920, **23**, No. 12

*Traumatism of the Spinal Cord. D. Prat.—p. 539.
*Ocular Complications in Measles. J. de Salterain.—p. 546.
*Unerupted Teeth in Upper Jaw. S. Sartori.—p. 551.

Traumatism of the Spinal Cord.—Prat reports two cases in which there was extravasation of blood in the cervical portion of the spinal cord. The diagnosis was dubious in both cases. The lumbar puncture fluid was blood stained; in the first case the head could be moved freely, and in both, radioscopy was negative. The first and only sign in one case was the semierection of the penis. The pulse showed only 22 beats to the minute. Faradic and galvanic electric tests confirmed that the spinal cord had not been totally severed, and necropsy in both confirmed that the lesion was a hematomyelia of the gray matter, about 2 cm. in extent.

Ocular Complications in Measles.—Salterain reports that in 426 children with eye disease during the recent epidemic of measles, 12.86 per cent. had recently recovered from measles. In most of the fifty-five cases the ocular affections were of the common type and rapidly subsided. But in three cases there was severe keratitis with intense photophobia ,and in these cases parenteral injection of milk cured at once the photophobia, thus allowing the children to resume their ordinary life.

Unerupted Teeth in Upper Jaw.—Sartori emphasizes the importance of looking for missing teeth if they have not been extracted. In case of doubt, radioscopy is imperative and with positive findings intervention should never be delayed. His article is illustrated.

Semana Médica, Buenos Aires

Aug. 19, 1920, **27**, No. 34

*Hernia of Large Intestine. A. G. Gallo.—p. 233.
*Phrenic Reaction in Gynecology. C. Stajano.—p. 243.
*Diagnosis of Incipient Tuberculosis. C. Citrino.—p. 248.

Hernia of the Large Intestine.—Gallo illustrates his communication with thirteen reproductions of various types of hernia, and recalls that every hernia has a complete sac. The movability of the intestine is the main factor. Adhesions that are not of fibrous nature are of ontogenous origin.

The Phrenic Reaction in Gynecology.—Stajano applies this term to reactions in the upper abdomen with disease in the female internal genital organs. He never encountered an actual subphrenic abscess but congestion and lymphangitis are common, and are liable to prove misleading. Some typical cases are related. There is spontaneous pain and tenderness along the costal arch on one or both sides, with special intensity at the inferior phrenic point, the diaphragmatic point. The pain here is increased by forced inspiration, the sharp pain simulating that from an inflamed gallbladder. There may be pain along the entire costal arch on one side, half encircling the chest, radiating to the shoulder and the inner part of the arm on the same side, in both gonococcus and puerperal cases.

Diagnosis of Tuberculosis.—Citrino concludes his study of this subject with the statement that no sign is reliable except a daily persisting temperature above normal. This is enough, he says, to establish the presence of tuberculosis when all other causes can be excluded.

Siglo Médico, Madrid

Nov. 13, 1920, **67**, No. 3492

*Paralysis Agitans and Neuropathies. G. Rodríguez Lafora.—p. 857.
Surgery of the Prostate. R. Molla.—p. 859. Conc'n in No. 3494, p. 902.

Nov. 20, 1920, **67**, No. 3493

Lethargic Encephalitis. R. del Valle y Aldabalde.—p. 877.
Hydatid Cyst in Lung. F. Rico.—p. 880.

Nov. 27, 1920, **67**, No. 3494

Epidemic Encephalitis, Chorea and Paralysis Agitans. E. Fernández Sanz.—p. 897.
Nevi and Their Treatment. Sicilia.—p. 901.
Surgery of the Prostate. R Mollá.—p. 902. Conc'n.

Dec. 4, 1920, **67**, No. 3495.

History of Cataract and Its Treatment. Márquez.—p. 917. Conc'n in No. 3499, p. 6.
Formaldehyd-Lime for Disinfection. F. Valenzuela.—p. 921. Conc'n in No. 3496, p. 943.

Paralysis Agitans and Similar Nervous Disease.—Rodriguez Lafora reviews the results of recent research confirming the degenerative processes in the lenticular nucleus and striate bodies as constant in nervous diseases with tremor and rigidity. Thomalla would group double athetosis, pseudosclerosis and progressive muscular dystonia as lenticular dystonia, apart from cases with lesions in the pyramidal tracts. Marie and Lévy have recently published a study of paralysis agitans as a sequel of lethargic encephalitis, but the lesions with this are not in the lenticular nucleus, as in true paralysis agitans, but are in the cerebral peduncles close by. It is evident therefore that the paralysis agitans symptoms can be produced by lesions in the lenticular nucleus, thalamus or red nucleus or the tracts connecting them with the cerebellum and medulla. The localized cause thus seems to be established for tremor, chorea and athetosis, which until comparatively recently were regarded as neuroses without organic basis.

Deutsche medizinische Wochenschrift, Berlin

Oct. 28, 1920, **46**, No. 44

*The Differentiation of Acid-Fast Bacteria. H. Schlossberger and W. Pfannenstiel.—p. 1213.
Syringomyelia. H. Stursberg.—p. 1214.
Scitz and Wintz Roentgen-Ray Dosage. R. Lenk.—p. 1215.
*Differentiation of Streptococcus Types. M. Beckman.—p. 1218.
*Causation of Accidental Murmur. M. v. Falkenhausen.—p. 1221.
Mercuric Chlorid plus Arsphenamin in Syphilis. Holzhäuser.—p. 1222.
The Twin Laminaria Tent. H. Kritzler.—p. 1223.
Stain for Tubercle Bacilli. H. Schulte-Tigges.—p. 1225.
Anuresis. L. Casper.—p. 1225.

Differentiation of Acid-Fast Bacteria.—Schlossberger and Pfannenstiel state, on the basis of extensive investigations on the biology of tubercle bacilli, that a sharp differentiation between genuine tubercle bacilli and other acid-fast pathogenic and nonpathogenic bacteria resembling them is possible by determining the optimal temperature for their growth and the temperature limits of their growth. Aside from the atypical Arloing strain, genuine tubercle bacilli do not grow at a higher temperature than 42 C., whereas all acid-fast cultures, with the exception of the so-called trumpet bacilli, still grow at 50 C. Genuine tubercle bacilli from cold-blooded animals stop growing at 37 C.; the strains from turtles grown by Friedmann and Piorkowski cannot, therefore, in view of their abundant growth at this temperature, be regarded as genuine tubercle bacilli from cold-blooded animals.

Differentiation of Virulent and Avirulent Types of Streptococci by the Sigwart Method.—Beckman discusses Sigwart's method and states that he was unable by this method to differentiate between virulent and avirulent streptococci.

The Causation of the Accidental Murmur Over the Pulmonary Artery.—Falkenhausen states that beyond all doubt the accidental murmurs of the heart are caused by the pulmonary artery lying abnormally near to the sternum. This is made possible by the fact that the heart lies especially close to the anterior chest wall, which condition often goes hand in hand with a median position of the heart. The mechanism of the murmur consists mainly of rubbing of the pulmonary artery (or of overlying portions of the lung against which it presses) against the anterior chest wall.

Deutsche Zeitschrift für Chirurgie, Leipzig

September, 1920, **158**, No. 1-2

*By-Effects with Local Anesthesia. T. Schaps.—p. 1.
*Acute Gastric and Duodenal Hemorrhage. H. Finsterer.—p. 44.
Disability from Radial Paralysis. H. Eckhardt.—p. 137.

By-Effects with Local Anesthesia.—Schaps describes the phenomena noted with procain-epinephrin local anesthesia in 9 operations and in 8 subcutaneous test injections, also in 10 goiter operations with nerve blocking, and 11 cases of corresponding test paravertebral injections. The difference in the responses he ascribes to the differences in absorption rather than to individual susceptibility. With the paravertebral nerve blocking in the neck, there is a possibility of paralyzing the vagus and the sympathetic nerves; this usually is harmless, but it might entail serious consequences in persons inclined to vagotonia or sympatheticotonia. The vagus is also liable to be irritated by the cannula in this nerve blocking in the neck. The cases reported confirm the advisability of supplementing the nerve blocking with a ring of local injections for goiter operations. The pulse was accelerated with both local and nerve blocking anesthesia, but reached a higher figure with the latter.

Surgical Treatment of Acute Stomach and Duodenal Hemorrhage.—Finsterer reviews ninety-eight publications on this subject and analyzes his own experiences with twenty-four cases. These data have convinced him that the percentage of fatal hemorrhages from gastric or duodenal ulcer is larger than generally realized. With a large arrosion, spontaneous arrest of the hemorrhage is scarcely to be anticipated, so that the dangers of waiting surpass those of immediate intervention. He therefore operates as soon as possible, when the findings and the history of the case suggest that there is a chronic hard or boring gastric ulcer, and with duodenal ulcer. An exploratory laparotomy under local anesthesia is less dangerous in any event than uncertain waiting. If no deep ulceration is found, the assumption of a spontaneous arrest is justified. With a penetrating ulcer, resection is the best treatment, as this cures the patient at the same time that it arrests the bleeding. If no callous ulcer is found, but the history and pylorospasm suggest ulcer, he makes a wide gastro-enterostomy slanting from the lesser to the greater curvature. If he finds merely parenchymatous hemorrhage, he stops the operation and by internal treatment seeks to enhance the coagulating property of the blood. In conclusion, he warns that general anesthesia is contraindicated as peculiarly dangerous in anemia from these hemorrhages. Also that the ordinary doses of morphin and procain may have a toxic action after severe losses of blood. Little or no morphin should be given, and the solution of procain should be 0.25 per cent. instead of 0.5, and only small amounts be used, and ether only by the drop. Sixteen of his twenty-four patients were saved by his prompt intervention.

Jahrbuch für Kinderheilkunde, Berlin

1920, **93**, No. 6

Rumination in Infants. G. Stern.—p. 341.
*Duodenal Atresia or Enterospasm. C. Schaefer.—p. 347.
*Functioning of the Kidneys in Infants: Nitrogen. E. Stransky and A. Bálint.—p. 350.
*Thicker Food for Infants with Habitual Vomiting. B. Epstein.—p. 360.
*Functioning of the Kidneys in Infants: Water and Salt. E. Stransky and O. Weber.—p. 368.

Atresia or Spasm?—Schaefer reports a case in which a three months child had had the abdomen opened by another physician on assumption of megacolon. Nothing was found except spastic contraction at different points, and the operation brought no relief. Schaefer advised giving atropin, and the spasms subsided at once. In another case the child was five days old and the symptoms were those of atresia but he gave atropin before, during and after each feeding, and the condition was promptly restored to normal. The spasm returned once or twice in the following weeks but each time the atropin cured it. The enterospasm at first had been evidently in the duodenum and later it occurred in the sigmoid region. This child took the breast only when the milk flowed readily, and it had to be supplemented with buttermilk for a time.

Functioning of the Kidneys in Infants.—Stransky and Bálint report extensive research on a number of sick and healthy infants with tests of residual nitrogen and urea nitrogen in the blood by micromethods, with corresponding research on the urine. Their conclusions are that the kidney functioning in infants is like that in later life, but that extrarenal factors have an important influence on the distribution of nitrogen in the blood and urine. The extrarenal factors are particularly active in the responses to diuretics.

Habitual Vomiting in Infants.—Epstein comments on the peculiarly large air content of the infant stomach, both with breast and bottle feeding. Another feature of the infant stomach is the lack of the ability to contract the stomach concentrically around the food. This peristole seems to be a reflex function and there seems to be some parallel between

the size of the air bubble and this peristolic function. For these and other reasons he gives a more solid gruel instead of the usual fluid food in case of habitual vomiting. This seems to elicit the peristole reflex, and this expels the air. Even a small amount of a more consistent food, immediately before the ordinary feeding, starts the peristolic reflex as a conditional reflex. Two or three teaspoonfuls of a thickish gruel are given five minutes before the feeding. Even breast milk can be concentrated to form the more solid food required for the purpose. In nine of the thirty-six children thus treated the vomiting ceased at once; in twenty-two the vomiting gradually subsided in the course of from three to ten days. In two of the cases no effect was apparent and atropin was given. As the vomiting stopped, the children began to thrive at once. This treatment has the special advantage for the breast fed that the breast feeding can be resumed. In conclusion he says that this peristolic functioning of the stomach is not the only factor, probably, in habitual vomiting; the diaphragm may be involved, but this treatment with *breiwerfütterung* is certainly worth a trial.

Elimination of Water and Salt by Infants.—Stransky and Weber give findings from their research which demonstrate that the kidneys in infants behave like those of adults in regard to water and salt. The kidney functioning in this respect is as perfect in the youngest as in older children so that the kidneys from birth seem to be fully developed. The experiences which seem to indicate the contrary are all of extrarenal origin.

Therapeutische Halbmonatshefte, Berlin

Oct. 15, 1920, **34**, No. 20

*The Treatment of Strangulated Hernia. K. Scheele.—p. 557.
Treatment of Diseases of the Ear. III. M. Maier.—p. 560.
Vegetable Mucoids as Laxatives. W. Bauermeister.—p. 566.
Apparently Moribund Condition After Morphin. W. Schultz.—p. 571.

The Treatment of Strangulated Hernia with Especial Reference to Taxis.—Scheele says, in regard to the indications for the treatment of strangulated hernia, that in certain cases taxis may be indicated as a make-shift, if external conditions or especial causes affecting the patient require it. If two hours have elapsed since the strangulation took place, taxis should not be undertaken. If taxis cannot be accomplished easily and within a few minutes, attempts should not be persisted in. As an operation for the radical cure of the hernia must be done later, taxis cannot be regarded as a substitute for an operation. It simply makes it possible to defer the operation until a more convenient time.

Zentralblatt für Chirurgie, Leipzig

Oct. 23, 1920, **47**, No. 43

*Removal of Suprarenal Glands in Epilepsy. A. Brüning.—p. 1314.
*Ligation of Arteries in Goiter Operations. E. Kreuter.—p. 1317. Idem. W. Lobenhoffer.—p. 1319.
Gangrene of Terminal Phalanx of Finger in Panaritium. J. Kaiser.—p. 1322.
Opening of the Stomach without Loss of Blood. A. Hofmann.—p. 1323.

Extirpation of Suprarenal Glands in Treatment of Epilepsy.—Brüning, influenced by H. Fischer's theory that by the reduction of the substance of the suprarenal glands of an animal the tendency to convulsive seizures is lessened, has tried removing the left suprarenal gland in nine cases of epilepsy. He describes the technic in detail. The experiment was not successful in every particular, but an improvement was effected in all cases and in some instances amounted to a practical cure. Two of the patients were entirely freed from epileptic attacks. The cases that were unsuccessful were perhaps not carefully selected owing to lack of experience. Brüning does not wish to be understood as claiming that all cases of epilepsy can be cured in this manner. He simply regards the operation as pointing to a new method which will make it possible in a certain number of cases to relieve in a measure the main symptoms of epilepsy, the convulsions.

Ligation of All Four Arteries of the Thyroid in Goiter Operations.—Kreuter refers with satisfaction to Madlener's recent article on goiter operations, an abstract of which appeared in THE JOURNAL, Nov. 20, 1920, p. 1461. For the past year Kreuter has also ligated, more and more frequently, all four arteries, and regards this method as marking a distinct advance in the technic of goiter operations, so that now this procedure is being employed in every bilateral resection. Then again, Kreuter agrees with Hotz and others that the unilateral operation often leads to recurrences and that bilateral resection is the normal procedure. Kreuter also leaves pieces of the thyroid about the size of a walnut. If there is marked degeneration of the glandular tissue, rather more is left. His experience extends over 200 operations, yet he has never seen any disturbances on account of which the method itself could be incriminated.

Ligation of the Four Arteries of the Thyroid in Bilateral Goiter Resection.—Lobenhoffer states that ligation of all four arteries is with him the method of choice which is seldom departed from. He has performed about 500 operations in this manner. Tetany directly following the operation occurred only once. Parathyroid tablets brought improvement. In another patient, fall of the head hair occurred, but the condition was only temporary. These were the only accidents that he has any record of that indicated even a partial disturbance of function in the parathyroids or the reduced thyroid. He has recently examined fifty of his patients that were operated on over a year previously and two of them, though they felt entirely well, presented a mild disturbance of the facial nerve and two had suffered from temporary fall of the hair. Lobenhoffer, therefore, sees no great danger for the goiter stump or the parathyroids in the ligation of all four arteries in bilateral strumectomy.

Hospitalstidende, Copenhagen

Nov. 17, 1920, **63**, No. 46

*Iron in Severe Anemia. C. Sonne.—p. 713.
Case of Traumatic Ossifying Myositis, or Rider's Bone. J. Fog.—p. 719.

Iron in Severe Anemia.—Sonne gives the detailed history under five years of observation of a case of severe anemia in a woman of 38. Arsenic never seemed to influence the hemoglobin percentage, and the organic preparations of iron also failed to benefit, in marked contrast to the benefit from inorganic ferrous sulphate and reduced iron. There was pronounced achylia. The case teaches that chlorotic conditions are best treated with inorganic iron, increasing to doses larger than those in general use, even up to 10 cg. of reduced iron. This, he adds, is not only the cheapest but probably the best of all preparations of iron.

Ugeskrift for Læger, Copenhagen

Dec. 23, 1920, **82**, No. 52

Rupture of Spleen from Contusion. H. O. Wildenskov.—p. 1607.
*The Anemia of Pregnancy. H. C. Gram.—p. 1609.

The Anemia of Pregnancy.—Gram found an average of 84 per cent. hemoglobin in 40 normal nurses, while the average percentage in 3 healthy women four months pregnant was 71; in 4 at the fifth month, 67; in 9 at the sixth month, 76; in 10 at the seventh, 78; and in 32 others at the eighth to tenth month, the average was from 78 to 80. In 3 cases of eclampsia at or after term the hemoglobin percentage was normal.

Dec. 30, 1920, **82**, No. 53

*Ileus as Complicating Ventrofixation of Uterus. R. Hastrup.—p. 1733.

Ileus as Consequence of Ventrofixation of the Uterus.—In Hastrup's case the ileus occurred while the patient was still in the hospital, convalescing from the ventrofixation which had been done by Olshausen's method.

Jan. 13, 1921, **83**, No. 2

*Radiotherapy of Cancer. S. Nordentoft.—p. 43.

Radiotherapy of Cancer.—Nordentoft describes a recent trip to Erlangen where Seitz and Wintz have been advancing roentgen-ray treatment of cancer until their school is taking the lead in Germany for this kind of work. He says that this has been facilitated by the fact that Erlangen is the home of the largest factory for making apparatus for this kind of work. Among the innovations are the use of two inductors, instead of one, and a simple, portable iontoquantimeter. He says in concluding his report of the technic, and its results as applied at Erlangen, that radiotherapy seems thus to have succeeded in realizing in practice what the last few years have produced in theoretical progress.